**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

CONSOLIDATED TRANSACTION PROCESSING LLC, Plaintiff, v. THE GAP, INC., Defendant.	**Civil Action No.** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Consolidated Transaction Processing LLC ("CTP" or "Plaintiff"), for its

Complaint against Defendant The Gap, Inc. (referred to herein as "Gap" or "Defendant"), alleges

the following:

NATURE OF THE ACTION

1.   This is an action for patent infringement arising under the Patent Laws of the

United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2.   Plaintiff is a limited liability company organized under the laws of the State of

Nevada with a place of business at 356 Greenwood Court, Villanova, Pennsylvania 19085.

3.   Upon information and belief, Gap is a corporation organized and existing under

the laws of the State of Delaware with a principal place of business located at Two Folsom

Street, San Francisco, California. Defendant can be served with process through its registered

agent, The Corporation Trust Company, 1209 Orange Street, Wilmington, DE 19801.

4.   This Court has personal jurisdiction over Gap at least because Gap regularly conducts and transacts business, including infringing acts described herein, in this District.

5.   Defendant conducts business in Texas, directly or through intermediaries and offers products or services, including those accused herein of infringement, to customers, and potential customers located in Texas, including in the Eastern District of Texas, and introduces infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district and elsewhere in the United States.

JURISDICTION AND VENUE

6.   This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.

7.   This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

8.   Venue is proper in this judicial district pursuant to 28 U.S.C. §1400(b). Gap maintains an established place of business in the state of Texas and the Eastern District of Texas, specifically including Gap stores at 820 West Stacy Road Ste 450, Allen, TX 75013-4813 and 2601 Preston Road Ste 2082, Frisco, TX 75034.

9.   Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process or the Texas Long Arm Statute, because Defendant conducts substantial business in this forum, including: (i) making, using, selling, importing, and/or offering for sale one or more websites or web addresses including, but not limited to www.gap.com, stored and/or hosted on one or more servers owned or under the control of Gap (the "Accused Instrumentalities"); or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided to citizens and residents in Texas and in this District.

BACKGROUND

The Inventions

10.   Robert S. Alvin is the inventor of U.S. Patent Nos. 8,712,846 ("the '846 patent")

and 8,396,743 ("the '743 patent"), together the "patents in suit."

11.   A true and correct copy of the '846 patent is attached as Exhibit 1.

12.   A true and correct copy of the '743 patent is attached as Exhibit 2.

13.   The patents in suit resulted from the pioneering efforts of Mr. Alvin (hereinafter

"the Inventor") in the area of electronic transaction processing over a communications network.

These efforts resulted in the development of methods and apparatuses for internet transactions

based on user-specific information and sending targeted product offerings based on personal

information in the late 1990s. At the time of these pioneering efforts, most commercially

available electronic commerce (e-commerce) technology used the Internet and web pages as an

advertising medium to replace catalog or infomercial type advertising. Moreover, such e-

commerce businesses operated by maintaining their own inventory in warehouses, leading to

higher costs. (*See* '846 patent at 2:63-3:2; 3:8-14.)

14.   For example, the Inventor developed methods and systems to offer targeted

products over a communications network. This is achieved by receiving product data for a

plurality of products from a plurality of distributors for the products, receiving customer data

from a plurality of customers, comprising personal information about the customers, and using

the data to generate at least one user-specific product offering from the plurality of products.

The user-specific product offerings are then conveyed to customers using automated messages.

(*See* '846 patent at 3:44-52.)

Advantage Over the Prior Art

15.   The patented inventions disclosed in the patents in suit provide many advantages over the prior art and improved the operations of business transactions conducted over the Internet. (*See* '846 patent at 1:18-20.)

16.   One advantage of the patented inventions is that they enable dynamically generating a catalog of products and building a product database comprising products from multiple distributors. The product information is transmitted automatically and continually updated throughout the day, or even in real time, as product information becomes available from the distributors. (*See* '846 patent at 5:22-50.)

17.   Another advantage of the patented inventions is that the product information is used to generate multiple catalogs from a single system and dynamically display user-specific interfaces. For instance, a student may be shown a catalog of products appropriate for students with academic pricing, while a business person may be shown a catalog of products appropriate for business and with available corporate discounts. (*See* '846 patent at 5:61-6:16.) Further, pricing for each product may be generated dynamically by an intelligent rule-based algorithm, (such as an artificial intelligence program), factoring in the distributor's price, any specials, and cost or profit margins. (Id. at 6:17-29.)

18.   A further advantage of the patented inventions is that they enable the use of stored customer information to be used for generating customized portfolios based on purchase patterns of individuals to provide targeted advertising, purchase incentives, specialized promotions, or competitive pricing. (*See* '846 patent at 5:7-20.)

19.   The use of a centralized database to store product data from the plurality of distributors—each of which offers similar products for sale—provides the ability to select from a

distributor based on various criteria, such as availability, price, shipping speed, or profit margins. ('846 patent at 9:23-58.) Prior systems using separate databases did not have the capability of selecting a distributor as each product was only available from one distributor. Further, centralization of the product database provides increased database security and consistency of data, as no individual distributor can modify the database contents (other than updating its own inventory and pricing).

20.   Even though prior systems accepted a shopper's personal information and may have stored it in a database, they did not use any stored personal information to dynamically generate catalogs with user-specific product offerings of products from the plurality of distributors. Instead, prior systems offered static catalogs to each prospective shopper that simply listed the products available for sale from each individual distributor, without aggregating or processing the catalog information in any manner. The use of a single centralized database, as taught by the '846 and '743 patents, improved the computerized backbone to allow a merchant to use product data and customer information together to provide a shopper with a more personalized shopping experience.

21.   The system described by the '846 and '743 patents thus enables a wider range of product offerings shown to a customer than a system offering products solely from a single merchant. For instance, the product offerings may take into account variations in price and availability, shipping speed, each distributor's desired profit margin, or an existing relationship between the customer and the distributor. ('846 patent at 9:47-58.) By selecting from a plurality of distributors, the '846 and '743 patents provide increased access to the marketplace for a wider range of distributors who may otherwise be excluded in favor of more established entities.

22.   Because of these significant advantages that can be achieved through the use of the patented invention, CTP believes that the patents in suit present significant commercial value for companies like Gap. Indeed, business transactions over the Internet are more commonplace than ever, and with the number of merchants selling products online, it is crucial that businesses distinguish themselves by the extent of automation and user-specific customization they provide during the online shopping experience. These advantages are taught by the inventions of the patents in suit.

Technological Innovation

23.   The patented inventions disclosed in the patents in suit resolve technical problems related to Internet transactions based on user-specific information, particularly problems related to the utilization of product data from a plurality of distributors and personal information of customers in generating electronic catalogs of user-specific product offerings. As the patents in suit explain, one of the limitations of the prior art as regards electronic transaction processing technology was that most e-commerce retail businesses still operated by maintaining an inventory in warehouses, as they used the Internet mainly as an advertising medium and to replace catalog or infomercial type advertising. (*See, e.g.*, '846 patent at 2:63-3:14.)

24.   The claims of the patents in suit do not merely recite the performance of some well-known business practice from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the patents in suit recite inventive concepts that are deeply rooted in computerized transaction processing, advertising, and product offering technology, and overcome problems specifically arising out of how to create targeted advertising by dynamically generating electronic catalogs from a plurality of products based on a user's personal information.

25.   In addition, the claims of the patents in suit recite inventive concepts that improve the functioning of electronic catalogs and payment authorization systems used for electronic transaction processing, particularly as they recite the use of a user's personal information to dynamically generate user-specific product offerings, authorize distributors to ship products directly to the user following successful payment processing, and send automated messages to customers containing order information.

26.   Moreover, the claims of the patents in suit recite inventive concepts that are not merely routine or conventional use of advertising, product offering, and transaction processing. Instead, the patented inventions disclosed in the patents in suit provide a new and novel solution to specific problems related to automating the process of targeted advertising, targeted product offering, and retail sales transaction processing by dynamically utilizing customer data and product data. The claims of the patents in suit thus specify how customer data and product data are manipulated to yield a desired result.

27.   And finally, the patented invention disclosed in the patents in suit does not preempt all the ways that user-specific information may be used to improve internet transactions, nor do the patents in suit preempt any other well-known or prior art technology.

28.   Accordingly, the claims in the patents in suit recite a combination of elements sufficient to ensure that the claim in substance and in practice amounts to significantly more than a patent-ineligible abstract idea.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,712,846

29.   The allegations set forth in the foregoing paragraphs 1 through 28 are incorporated into this First Claim for Relief.

30.   On April 29, 2014, the '846 patent, entitled "Sending Targeted Product Offerings Based on Personal Information" was duly and legally issued by the United States Patent and Trademark Office.

31.   CTP is the assignee and owner of the right, title and interest in and to the '846 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

32.   Upon information and belief, Gap has directly infringed at least claims 1, 3, and 4 of the '846 patent by making, using, providing, and/or causing to be used the Accused Instrumentalities, as set forth in detail in the attached preliminary and exemplary claim charts provided in Exhibit 3.

33.   CTP has been harmed by Gap's infringing activities.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 8,396,743

34.   The allegations set forth in the foregoing paragraphs 1 through 33 are incorporated into this Second Claim for Relief.

35.   On March 12, 2013, the '743 patent, entitled "Sending Targeted Product Offerings Based on Personal Information" was duly and legally issued by the United States Patent and Trademark Office.

36.   CTP is the assignee and owner of the right, title and interest in and to the '743 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

37.   Upon information and belief, Gap has directly infringed at least claims 1 and 4 of the '743 patent by making, using, providing, and/or causing to be used the Accused Instrumentalities, as set forth in detail in the attached preliminary and exemplary claim charts provided in Exhibit 4.

38.   CTP has been harmed by Gap's infringing activities.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, CTP demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, CTP demands judgment for itself and against Gap as follows:

A.   An adjudication that Gap has infringed the '846 and '743 patents;

B.   An award of damages to be paid by Gap adequate to compensate CTP for Gap's past infringement of the patents in suit, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

C.   A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of CTP's reasonable attorneys' fees; and

D.   An award to CTP of such further relief at law or in equity as the Court deems just and proper.

Dated: July 17, 2021   CORCORAN IP LAW PLLC

/s/ Peter J. Corcoran III
Peter J. Corcoran, III, Esq., M.S., LL.M.
Texas Bar No. 24080038
4142 McKnight Road
Texarkana, Texas 75503
Phone: (903) 701-2481
Toll Free: (844) 728-5481
Fax: (844) 362-3291
peter@corcoranip.com

Attorneys for Plaintiff
Consolidated Transaction Processing LLC

Exhibit 1

US008712846B2

(12) **United States Patent**
Alvin

(10) **Patent No.:** **US 8,712,846 B2**
(45) **Date of Patent:** *Apr. 29, 2014

(54) **SENDING TARGETED PRODUCT OFFERINGS BASED ON PERSONAL INFORMATION**

(71) Applicant: **Divan Industries, LLC**, Wilmington, DE (US)

(72) Inventor: **Robert S. Alvin**, Boulder Creek, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 4 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/794,781**

(22) Filed: **Mar. 11, 2013**

(65) **Prior Publication Data**

US 2013/0275219 A1   Oct. 17, 2013

Related U.S. Application Data

(60) Continuation of application No. 13/401,827, filed on Feb. 21, 2012, now Pat. No. 8,396,743, which is a division of application No. 12/589,645, filed on Oct. 26, 2009, now Pat. No. 8,374,956, which is a continuation of application No. 11/603,282, filed on Nov. 20, 2006, now abandoned, which is a continuation of application No. 09/343,550, filed on Jun. 30, 1999, now Pat. No. 7,139,731.

(51) **Int. Cl.**
G06Q 40/00   (2012.01)
(52) **U.S. Cl.**
USPC **705/14.58**; 705/26.5; 705/14.66; 705/38; 705/50; 705/1.1

(58) **Field of Classification Search**
USPC 705/1.1, 14.58, 14.66, 26.5, 38, 50, 40; 235/385, 380; 709/221, 223, 224
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,992,940 A	2/1991	Dworkin	
5,256,863 A	10/1993	Ferguson et al.	
5,261,044 A	11/1993	Dev et al.	
5,295,244 A	3/1994	Dev et al.	
5,436,909 A	7/1995	Dev et al.	
5,504,921 A	4/1996	Dev et al.	
5,559,955 A	9/1996	Dev et al.	

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0418144	3/1991
EP	0855687	7/1998

(Continued)

OTHER PUBLICATIONS

PurchaseSoft Procurement Intelligence, "Cashing in on e-commerce"; Year 2000, PurchaseSoft, Inc., Inc.*

(Continued)

Primary Examiner — John H Holly

(57) **ABSTRACT**

Targeted products are offered over a communications network. Product data for a plurality of products from a plurality of distributors for the products is received. Customer data from a plurality of customers comprising personal information about customers is received. Using the data, at least one user-specific product offering from the plurality of products is generated. Automated messages comprising the at least one user-specific product offering to the one or more customers are then sent.
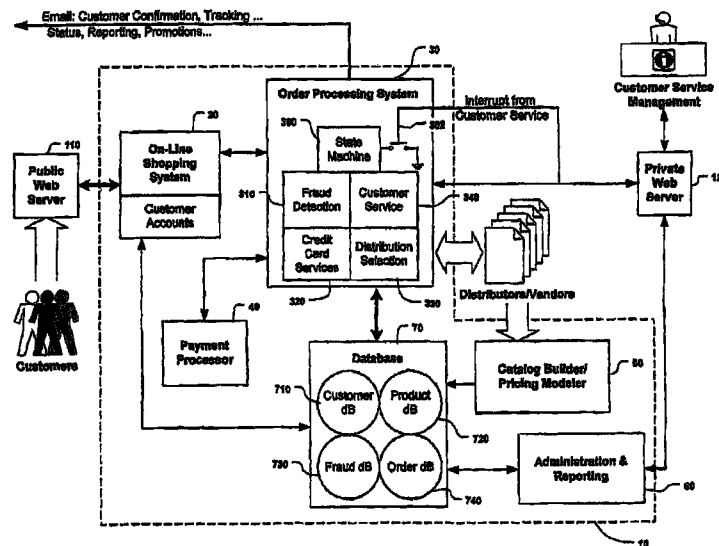
21 Claims, 5 Drawing Sheets

US 8,712,846 B2

Page 2

(56)   **References Cited**

U.S. PATENT DOCUMENTS

5,691,524	A	11/1997	Josephson
5,727,249	A	3/1998	Pollin
5,742,931	A	4/1998	Spiegelhoof et al.
5,751,933	A	5/1998	Dev et al.
5,799,284	A	8/1998	Bourquin
5,812,668	A	9/1998	Weber
5,812,750	A	9/1998	Dev et al.
5,850,446	A	12/1998	Berger et al.
5,870,721	A	2/1999	Norris
5,870,725	A	2/1999	Bellinger et al.
5,889,863	A	3/1999	Weber
5,895,455	A	4/1999	Bellinger et al.
5,915,019	A	6/1999	Ginter et al.
5,940,811	A	8/1999	Norris
5,943,424	A	8/1999	Berger et al.
5,966,698	A	10/1999	Pollin
5,982,891	A	11/1999	Ginter et al.
5,983,208	A	11/1999	Haller et al.
5,987,132	A	11/1999	Rowney
6,002,767	A	12/1999	Kramer
6,016,504	A	1/2000	Dobson et al.
6,026,379	A	2/2000	Haller et al.
6,029,154	A	2/2000	Pettitt
6,041,315	A	3/2000	Pollin
6,049,828	A	4/2000	Dev et al.
6,070,141	A	5/2000	Houvener et al.
6,072,870	A *	6/2000	Nguyen et al. 705/79
6,088,686	A	7/2000	Walker et al.

6,105,010	A	8/2000	Musgrave
6,119,105	A	9/2000	Williams
6,122,624	A	9/2000	Tetro et al.
6,141,653	A	10/2000	Conklin et al.
6,163,771	A	12/2000	Walker et al.
6,178,409	B1	1/2001	Weber et al.
6,253,027	B1	6/2001	Weber et al.
6,336,098	B1	1/2002	Fortenberry et al.
6,374,293	B1	4/2002	Dev et al.
6,460,020	B1	10/2002	Pool et al.
6,754,636	B1	6/2004	Walker et al.
7,139,731	B1	11/2006	Alvin
7,580,856	B1 *	8/2009	Pliha 705/14.26
8,260,678	B2	9/2012	Miller
2013/0124325	A1	5/2013	Alvin

FOREIGN PATENT DOCUMENTS

JP	10240823	11/1998
WO	WO 93/24892	12/1993
WO	WO 98/21679	5/1998
WO	WO 98/40809	9/1998
WO	WO 00/23909	4/2000
WO	WO 00/23928	4/2000
WO	WO 00/23929	4/2000

OTHER PUBLICATIONS

PurchaseSoft Procurement Intelligence, "Cashing in on e-commerce"; Year 2000, PurchaseSoft, Inc.
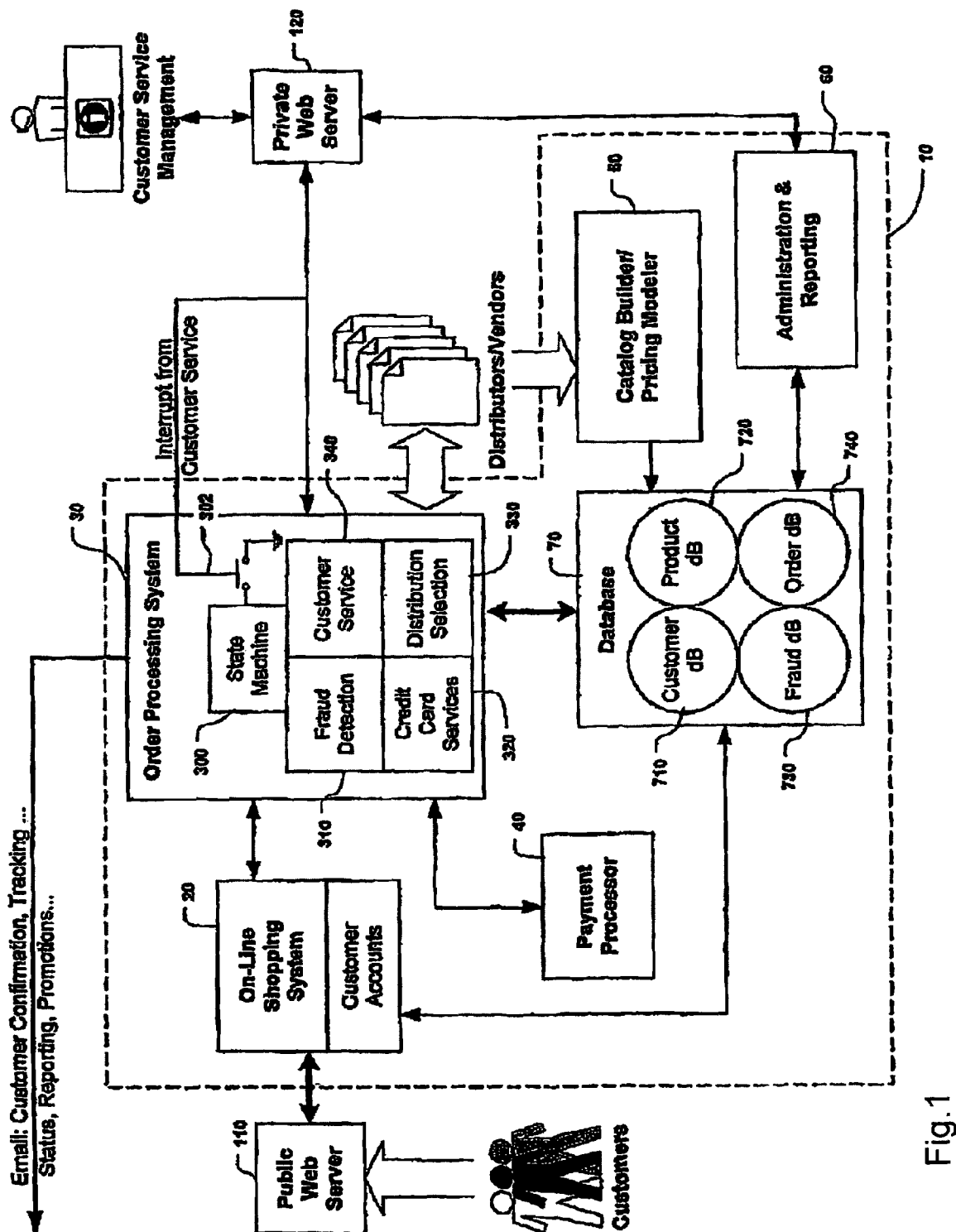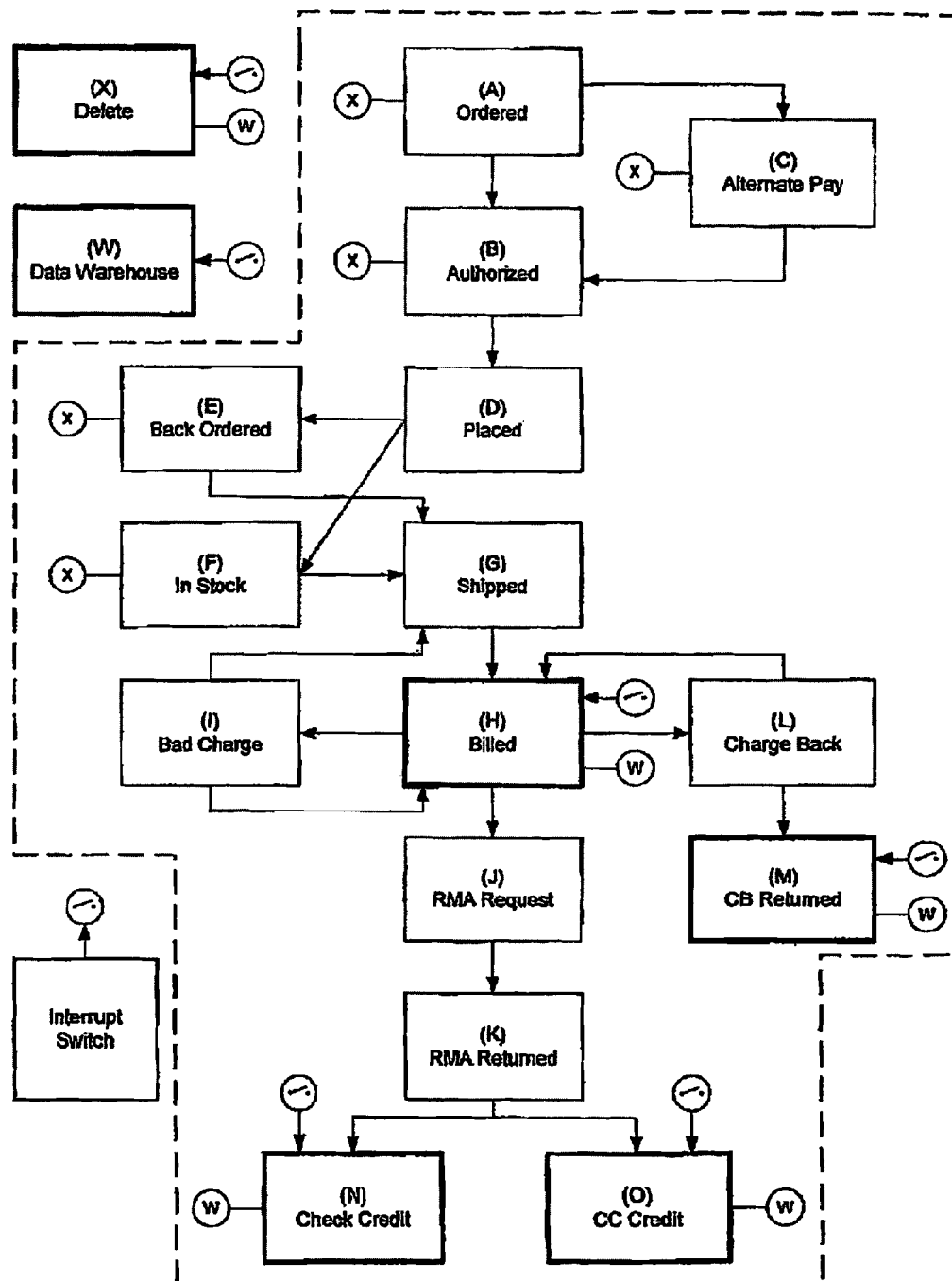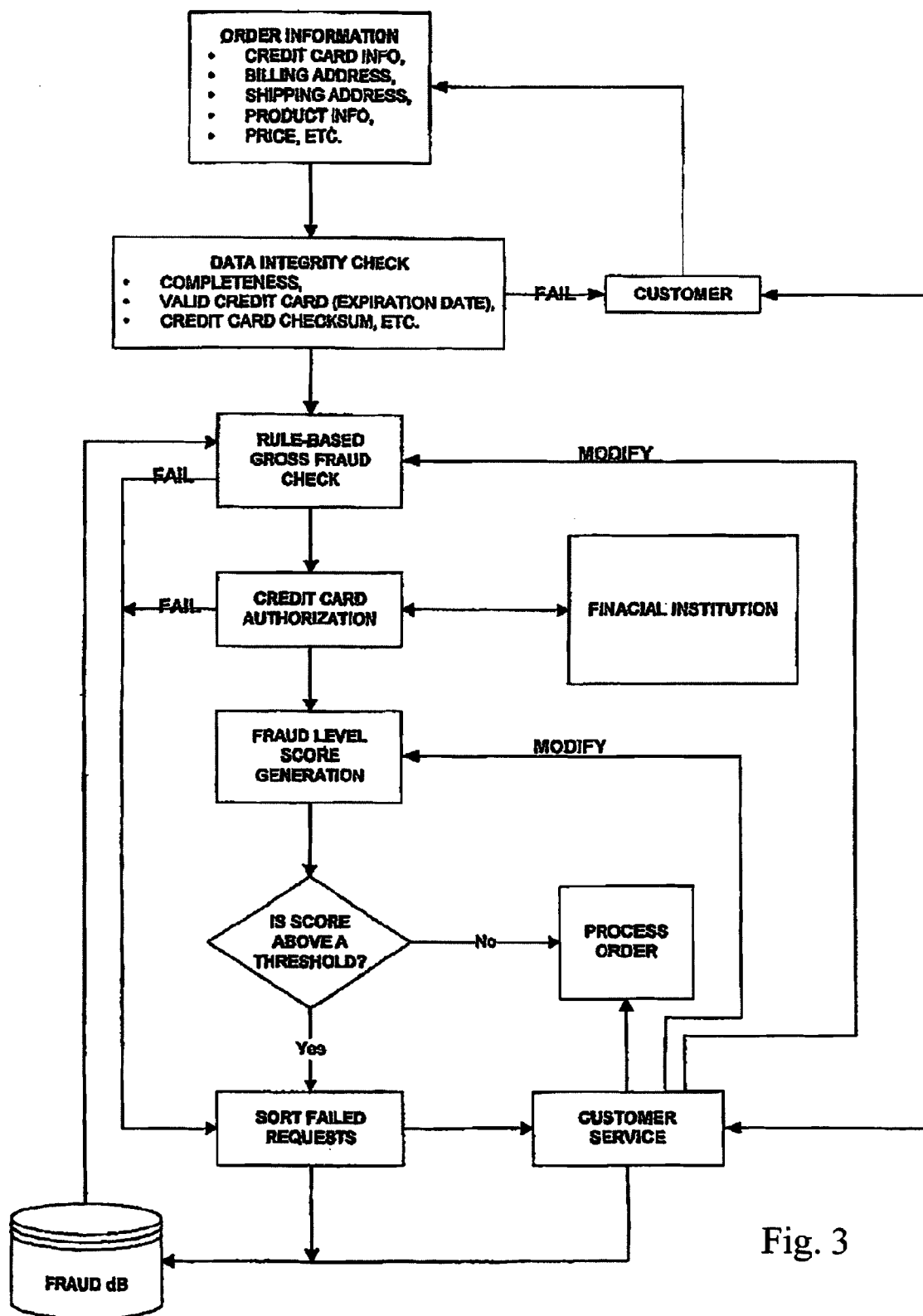
* cited by examiner

Fig. 1

Fig. 2

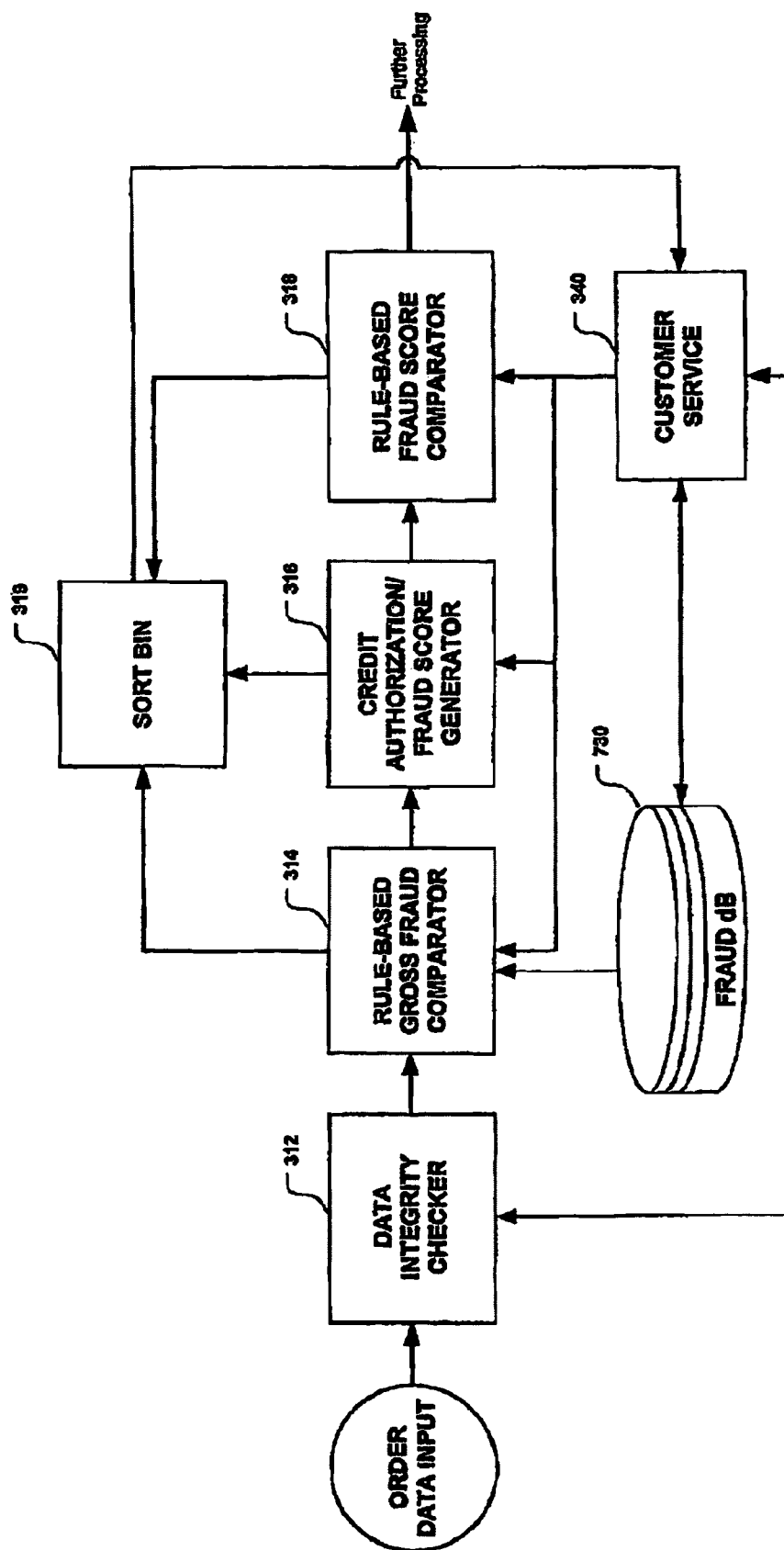**ORDER INFORMATION**
- CREDIT CARD INFO,
- BILLING ADDRESS,
- SHIPPING ADDRESS,
- PRODUCT INFO,
- PRICE, ETC.

DATA INTEGRITY CHECK
- COMPLETENESS,
- VALID CREDIT CARD (EXPIRATION DATE),
- CREDIT CARD CHECKSUM, ETC.

FAIL → **CUSTOMER**

RULE-BASED GROSS FRAUD CHECK

FAIL

MODIFY

CREDIT CARD AUTHORIZATION

FAIL

FINACIAL INSTITUTION

FRAUD LEVEL SCORE GENERATION

MODIFY

IS SCORE ABOVE A THRESHOLD?

No → **PROCESS ORDER**

Yes

SORT FAILED REQUESTS

CUSTOMER SERVICE

FRAUD dB

Fig. 3

Fig. 4

Fig. 5

US 8,712,846 B2

<table>
<tr><td>1</td><td>2</td></tr>
</table>

SENDING TARGETED PRODUCT OFFERINGS BASED ON PERSONAL INFORMATION

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority as a continuation of U.S. application Ser. No. 13/401,827, filed Feb. 21, 2011, which is a divisional of U.S. application Ser. No. 12/589,645, filed Mar. 22, 2010, which is a continuation of U.S. application Ser. No. 11/603,282, filed Nov. 20, 2006, now abandoned, which is a continuation of U.S. application Ser. No. 09/343,550, filed Jun. 30, 1999, now issued as U.S. Pat. No. 7,139,731.

TECHNICAL FIELD

The present invention relates to business transactions conducted over the Internet and in particular to a transaction processor to conducting the same.

BACKGROUND

Traditionally, commodities such as computer related products, for example, have been sold primarily through retail stores and catalogs and, more recently, through telephone sales supported by infomercials and other print and media advertising. However these traditional models for selling computer related products suffer significant disadvantages.

Store-based retailers have limited shelf space due to costly inventory and real estate investment considerations. This limits the number of products store-based retailers can offer to their customers. Also, the personnel required to operate stores are expensive and can be difficult to hire and train. The physical store's need for personnel also limits the flexibility and efficiency of the sales process. The number of customers that can be served and the quality of service is dependent on the number of personnel dedicated to the sales process.

Store-based retailers also face the financial risk of carrying inventory that may quickly become obsolete. Physical possession of inventory also limits the speed at which these retailers can change their merchandise mix and offer new products. This is because a store must physically obtain, set up and display the products. Physical stores also can only serve customers in a limited geographic area because the customers must travel to the store to shop. To extend this limited reach, new stores must be opened in different geographic locations. However, the time required and the significant investments in inventory, real estate and personnel required at each new location, make it difficult to expand quickly into new geographic regions.

Catalog-based (e.g., mail-order) retailing provides only a partial solution to the disadvantages of store-based retailing. Catalogs do provide customers with the convenience of shopping from home or the office at flexible times. However, catalog merchandising is costly and wasteful because paper, printing, and postage are increasingly expensive and a large percentage of people to whom catalogs are sent will not use them. Also, the number of products catalogs can feature and the product information they can provide are limited due to catalog mailing, printing and other related expenses.

Catalogs are also very inflexible and provide only limited accessibility. In order to change products or prices, the catalog must be reprinted and redistributed which is both costly and time consuming. Furthermore, catalogs' accessibility is limited in that they are available only to those people to whom they are sent. Also, the catalog shopping experience is, in general, neither interactive nor personalized, yet requires extensive personnel support and manual intervention on behalf of the retailer to take and process orders.

The more recent advent of the combination of infomercials and other advertising supporting telephone sales also provides only a partial solution. The ability to order by phone provides the same inconvenience that the catalog does. However, infomercial and other advertising is extremely expensive. They are also limited in their geographic scope. Typical media outlets serve only a relatively small geographic area. To expand the geographic scope of advertising, additional media outlets in different locations must be used. This greatly increases expenses. Advertising is also limited in duration. Expense increases drastically upon extending the term of the advertising.

The advertisements and infomercials that describe the products are also limited in the scope of products they can cover. The expense limits the size of print advertising and the duration of radio and television advertising. These limitations restrict the number of products that can be covered. They also restrict the amount of information that can be provided for the products.

Recently, the Internet has emerged as a powerful new global communications and commerce medium that represents a radical new way for people to share information and conduct business electronically. Though the Internet has been well known for several years, it has been mainly used for research and as an educational medium. Hence people were initially slow to adopt it as a common means of conducting retail commerce. However, with technology advancing such that personal computers are now an affordable commodity for the average household, more and more personal computers are being acquired for home usage. In conjunction with increased computer awareness and usage, affordability and ease of accessibility to the Internet from an average household has given birth to a new type of commercial medium referred to as Electronic Commerce (i.e., E-Commerce).

The increasing functionality, accessibility and overall usage of the Internet have made it an attractive commercial medium that can offer solutions to many of the shortcomings of the traditional retail models. For instance, the Internet has radically changed the relationship between customers. Online retailers can, from a single remote computer, interact directly and simultaneously with customers across the globe.

The Internet also eliminates the traditional retail models' limited availability and barriers to expansion. On the Internet, a store is accessible throughout the world around the clock. The limitations associated with printed catalogs are eliminated as well. There is no incremental cost associated with making Internet content available to people who will not use it. Internet also provides easy adaptability to changing market conditions and allowing an interactive, customizable retail experience.

Online retailers can respond more rapidly to customer demand by frequently modifying their product offerings, shopping interfaces and pricing, simply by modifying their Web site. Additionally, the Internet improves on the limited amount of information that can be conveyed in the catalog and advertising/telephone sales models of retail sales. Web sites are inexpensive relative to the number of potential customers they reach, allowing much more information can be provided on a Web site than in any advertisement.

However, even with the advantages that are associated with the usage of the Internet as a commercial medium, there are still drawbacks in the currently existing E-Commerce retail businesses. In particular, most E-Commerce retail businesses mainly use the Internet and Web pages as an advertising

3

4

medium to replace the previous catalog/infomercial type advertisements. Although some of the businesses have begun accepting product orders online via email or Web pages, the current E-Commerce businesses for the most part have adopted a hybrid business model in which the traditional business models are coupled with E-Commerce business practices.

For instance, the usage of the Internet has replaced a few of the traditional business practices such as advertising and order processing, but most of the so-called E-Commerce retail businesses of the prior art still operate by maintaining an inventory. That is to say, the current online businesses still maintain inventories in warehouses that store the merchandise to be sold. As described above, the costs associated with such business practices are high, especially in the computer related products market where their relatively short life cycle and the rapid adoption of new technologies and products make the traditional inventory store and catalog sales models particularly problematic. If the computer products are not sold in a relatively short period of time, the unsold merchandise will become obsolete due to the fast pace in which technology is evolving.

Furthermore, some of the prior art E-Commerce systems are prone to unnecessary down-time due to dependence of out-sourced services resulting in loss of sales during the down-time period. In particular, the primary use of credit cards as the preferred method of payment over the Internet has made checking for credit card fraud a necessity. To that end, almost all E-Commerce businesses are connected to a financial service center for processing fraud checks. However, if the connection to the service center is down for any reason, process of sales is halted until a fraud check can be performed. Additionally, most E-Commerce businesses rely exclusively on the results of the commercially available fraud check institutions. If the criteria set by the fraud check institution are too high, then sales that would otherwise have been profitable are lost.

SUMMARY

The above-mentioned needs are met with a method, a computer program product, and a system for targeted product offerings.

Targeted products are offered over a communications network. Product data for a plurality of products from a plurality of distributors for the products is received. Customer data from a plurality of customers comprising personal information about customers is received. Using the data, at least one user-specific product offering from the plurality of products is generated. Automated messages comprising the at least one user-specific product offering to the one or more customers are then sent.

Additional objects, advantages and novel features of the invention will be set forth in the description which follows or may be learned by those skilled in the art through reading these materials or practicing the invention. The objects and advantages of the invention may be achieved through the means recited in the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate the present invention and are a part of the specification. Together with the following description, the drawings demonstrate and explain the principles of the present invention.

FIG. **1** is a block diagram showing the overall system of the present invention.

FIG. **2** is a state diagram of the order processing of the present invention.

FIG. **3** is a flow diagram showing the fraud processing according to the present invention.

FIG. **4** is a logic block diagram for performing the multi-level fraud processing according to the present invention.

FIG. **5** is a flow diagram showing the distributor selection processing according to the present invention.

DETAILED DESCRIPTION

Using the drawings, the preferred embodiments of the present invention will now be explained. As shown in FIG. **1**, the Internet business transaction processor **10** of the present invention has a distributed processing design allowing the processing load to be distributed among multiple parallel servers. The Internet business transaction processor according to the present invention is comprised of an Online Shopping System **20**, Order Processing System **30**, Payment Processing System **40**, Catalog Builder/Price Modeler **50**, and Administration System **60**. The transaction processor **10** of the present invention also includes a main database **70** comprised of a Customer Database **710**, Products Database **720**, Fraud Database **730**, and Order Database **740**.

According to the present invention, a customer accesses the Online Shopping System **20** via a public Web server **110** to obtain product information available for purchases, set up a customer account, check order status, etc. The Order Processing System **30** receives the product order requests and processes the orders to check for availability with multiple distributors, orders the products based on pricing information, performs credit card validations, etc. The Payment Processing System **40** processes the method of payment once the orders have been properly processed. The Catalog Builder/Price Modeler **50** builds information of the products offered by the distributors to be made available by the Online Shopping System **20** to the customer as well as the prices at which these products will be offered based on a pricing model to be described in detail below. Customer service representatives and managers have access to all of the information in the database via the Administration System **60** through a dedicated secure Web server **120** available only to authorized personnel. The Administration System **60** is used to produce reports of sales, reconcile order discrepancies, manually adjust prices, approve credit, etc. Functionality of each of the sub-systems will now be explained in detail.

Online Shopping System

The Online Shopping System **20** is the main interface between the customer and the E-Commerce business and is primarily responsible for providing the overall online shopping experience to the customer. The Online Shopping System **20** of the present invention provides an electronic catalog of available products stored in the Products Database **720** along with the price of the product. This information is generated by the Catalog Builder/Price Modeler **50** to be descried in detail below.

The electronic catalog is a Web page, for example, that dynamically displays product information from the Products Database **720**. Consequently, the electronic catalog is always up to date with the most recent product information and does not suffer from the same shortcomings as that of the prior art cataloging systems. Furthermore, because each product is displayed as a dynamic variable, a new catalog does not have to be generated every time the Product Database **70** is updated. Only the updated product information will be changed in the catalog.

US 8,712,846 B2

5

In conjunction with the electronic catalog, the Online Shopping System **20** provides an electronic shopping cart that keeps record of each item marked to be purchased by the customer and provides a finalized shopping list and the total amount purchased at the end of a shopping session which may include appropriate taxes and shipping/handling charges.

The Online Shopping System **20** is also used to create customer accounts with such information as customer name, billing address, telephone number, email address, etc. and this information is stored in the Customer Database **710**. Such information is used by the transaction processor **10** for billing, order notification, promotional/incentive distribution, etc. A customer may also access the Online Shopping System **20** to track the status of previous orders and returned merchandise, send inquiries to Customer Service, etc. Furthermore, customer accounts can be used to generate customized portfolios based on purchase patterns of individuals to provide targeted advertising, purchase incentives such as electronic coupons and rebates, specialized promotions and competitive pricing of high demand products.

Catalog Builder/Price Modeler

As described generally above, the Catalog Builder/Price Modeler **50** builds the Products Database **720** with available products from the distributors as well as the sales price for each product. With regard to the catalog generation, the Catalog Builder/Price Modeler **50** receives product information from multiple distributors. The product information includes but are not limited to product description, quantity available, and price for the product.

Access to the product information from the distributors may be accomplished by Telnet, FTP (File Transfer Protocol), industry standard EDI (Electronic Data Interchange), or any other appropriate communication protocol including specialized client/server software provided used by the distributors.

Downloading of the product information from the distributors is scheduled to run automatically by the Catalog Builder/Price Modeler **50** so that no human interaction is necessary unless it is desired to do so. The product information is preferably updated continually throughout the day as updated product information becomes available from the distributors or based on other preselected triggers. For example, all the distributor data may be updated during certain times of the day. Data for some selected distributors may be updated hourly while product data of others may be updated every time the web page is viewed for that product or after the product is ordered. As the communications technology becomes more advanced, it may be possible to maintain a continuous connection to the distributors' network thereby obtaining real-time status of each product offered by the distributor.

For other suppliers of products that may not have such communication capabilities or does not make economic sense to provide such continuous update of product information, an alternative system may be provided for updating/accessing product information. For instance, small distributors or individual vendors may operate through a secure web site to update their product information, receive order information from the transaction processor of the present invention, and provide shipping/tracking information of their products from their companies.

Once the product information from each of the distributors is collected, the Catalog Builder/Price Modeler **50** sorts the product information to generate the electronic catalog. The Catalog Builder/Price Modeler **50** of the present invention generates multiple catalogs from the same system and allows the Online Shopping System **20** to dynamically display user specific interfaces. The Catalog Builder/Price Modeler **50**

6

generates catalogs with different visual presentations (e.g., color, fonts, graphics, advertising, etc.) and product offerings depending on the user accessing the Online Shopping System **20** based on the user-specific information via criteria-specific templates.

For example, when a student accesses the Online Shopping System **20** of the present invention as a potential customer, the Online Shopping System **20** displays a catalog of mixed products appropriate for students with academic pricing. Alternatively, a business person who accesses the Online Shopping System **20** of the present invention may see a catalog of products appropriate for his or her business with available corporate discounts for that product. This way, a single system is maintained that looks and functions like many different catalog shopping systems.

The pricing model used by the Catalog Builder/Price Modeler **50** of the present invention is an intelligent rule-based algorithm such as an AI (i.e., Artificial Intelligence) program generates a competitive price for a product based on price of the product offered from the distributors, any specials that are being promoted for the product, and cost/profit margins from the sale of the product to the customer. Simply stated, the price of the product is a function of the profit margin. Default margins are set in the rule-based programming of the pricing model, but due to its adaptability the Catalog Builder/Price Modeler **50** may automatically adjust the margins based on the rules of the pricing model and the pricing information obtained from the distributors. Further, the rules of the pricing model and setting of margins may be manually modified using the Administration System **60** to be explained in detail below.

The Catalog Builder/Price Modeler **50** of the present invention uses a plurality of margins to determine the sales price of a product depending on which category the product is in. For instance, the margin for the products in the first category may be set to 10%+cost since this is a category of products that the customer would most likely buy even though the price may be a little bit high. On the other hand, the margin for the products in the second category may be set to 2.5%+cost in order to provide a competitive price for high demand products. Further, the margin for the products in the third category may be set to 0%+cost due to promotionals of discontinued products, for example.

The Catalog Builder/Price Modeler **50** may be used to obtain initial sale prices of the products to be listed in the electronic catalog. Furthermore, the Catalog Builder/Price Modeler **50** may also adjust the pricing dynamically based on other system data that may change throughout the day. For example, the price may be adjusted based on the amount of web site traffic, sales for a particular vendor, category, or SKU, and even the time of day. Subsequently, the Catalog Builder/Price Modeler **50** may be used in conjunction with the Order Processing System **30** to be described in detail hereinafter to select a distributor to fill the order for a selected product using real-time data at the time of purchase. In this way, prices of the products in the electronic catalog can be dynamically changed based on the current market for these products.

Order Processing System

The Order Processing System **30** of the present invention processes the orders passed from the Online Shopping System **20**. The Order Processing System **30** of the present invention is comprised of four basic sub-systems: Fraud Detection **310**, Credit Card Services **320**, Distributor Selection **330**, and Customer Service **340**. The overall functionality of the Order Processing System **30** is described hereinafter.

US 8,712,846 B2

7

8

When an order for a selected product is received, the Order Processing System **30** first determines whether the order is a valid order by the Fraud Detection sub-system **310**. If the order is valid, then the order is sent to the Distributor Selection sub-system **330** to determine firstly if the product ordered is available and secondly from which distributor the product will be supplied. Once a distributor is chosen the order is fulfilled with the distributor. After confirmation of product shipment, the order is sent to the Payment Processing System **40** via the Credit Card Services sub-system **320** to charge the customer's credit card for the purchase. The Customer Service sub-system **340** monitors each of the ordering processes and can intervene anywhere in the process if warranted.

Moreover, the Order Processing System **30** of the present invention is driven as a state machine **300**. As such, a purchase order during processing enters predetermined states as shown in FIG. **2**. Interrupt switch **302** is operable to interrupt state machine **300** to facilitate selective tracking of an order during processing to determine the status of any purchase order during processing. The intervention of the state machine **300** also allows the ability to force an order into a particular state or manually set certain flags by hand. As such, the state machine **300** of the present invention allows enhancements to the state diagram for manageable changes to the Order Processing System **30**. Additions or deletions of new states, arcs, and conditions change the paths an order takes through the order processing operation. As will be hereinafter more fully explained, a purchase order during processing under control of state machine **300** can only come to rest at a predetermined number of processing stations or states (e.g., H, M, N, O, X, etc.) as shown in FIG. **2**.

Each block represents a state in which a purchase order being processed by the Order Processing System **30** can occupy. According to the present invention, a purchase order being processed by the Order Processing System **30** must move from one state to the other except in the states indicated in bold, e.g., states (H), (M), (N), (O), (X), and (W). These are the only states according to the present invention in which a purchase order can be at rest at a final destination. All other states are transient and the order will eventually move to the next state, or eventually flagged with an error condition which triggers an alarm to customer service indicating an abnormality in the order processing. For example, an order that has been placed for a product in stock but never shows up as being shipped (i.e., stuck in the "in-stock" state) times out after a predetermined time period and is flagged as an error. With the Order Processing System **30** of the present invention functioning as a state machine as described above, a purchase order can only be in predetermined states at any given time thereby facilitating ease of tracking of the status of an order.

A detailed description of each of the sub-systems is provided hereinafter.

Multi-Level Fraud Detection

The Fraud Detection sub-system **310** of the present invention is a multi-level fraud checking system used to determine if an order is a valid order. As shown in FIG. **1**, when an order is passed from the Online Shopping System **20**, the Order Processing System **30** receives the order information such as credit card information, billing address, shipping address, quantity of selected products, sales prices of the products, etc. This order information is initially passed through the Fraud Detection sub-system **310**.

As shown in FIG. **4**, the logic blocks of the Fraud Detection sub-system **310** includes a data integrity checker **312**, a rule-based gross fraud comparator **314**, a credit authorization/fraud score generator **316**, and rule-based fraud score comparator **318**. The interaction of these logic blocks will be explained with reference to the flow diagram as shown in FIG. **3**.

Once the order data is input into the Fraud Detection sub-system **310**, the data integrity checker **312** initially performs a data integrity check on the order information for completeness such as billing address information, shipping address information, and method of payment. For example, credit card information is checked to verify that the credit card is not yet expired for credit card purchases. If the data integrity check fails on the order, the customer is notified of the incomplete portions of the order for correction. Once the order passes the data integrity check, the order then proceeds to the gross fraud comparator **314**.

Gross fraud check involves searching the Fraud Database **730** internal to the transaction processor **10** of the present invention for history of bad credit by the customer submitting the order. The gross fraud check of the present invention acts as an initial filter for rejecting obvious fraudulent orders such as orders from "black-listed" customers in the Fraud Database **730** with previous histories of bad credit, orders from counties other than the United States under economic crisis, etc. If an order fails the gross fraud check, the order is passed to Customer Service **340** and the customer is immediately notified of the reasons why the order cannot be processed. If, on the other hand, the order passes the gross fraud check, the order is then checked for credit card authorization from a financial institution, such as a commercially available fraud check service and AVS (Address Verification Service).

Based on the information received from the financial institution, a fraud level score, for example, is generated by the credit authorization/fraud score generator **316**. The fraud level score is a grading system that indicates the level of risk the order will pose to the business by processing the order. The score is then compared with several predetermined thresholds by the rule-based fraud score comparator **318** and takes different actions based on the comparison to these multiple thresholds. If the score is below the minimal threshold, the order is sent for further processing. If the score is above the maximum threshold, the order is sent into sorting bin **319**. The intermediate thresholds allow the order to pass through various intermediate steps while triggering flags for each failed threshold comparison. This allows the failed order to be characterized by several types of failures given a total overall score. The sorting bin **319** of the present invention acts as a buffer to minimize discarded orders. According to the present invention, a dynamic sorting procedure is performed on the rejected orders stored in the sorting bin **319**.

The failed orders in the sorting bin **319** are analyzed for reasons why the fraud level score was so high. Failed orders are analyzed for previous purchases by the customer, whether the customer is an account holder, etc. and sorted between high risk and low risk orders. For instance, orders from repeat customers who otherwise have a good history of previous purchases, for example, are low risk orders even though the fraud score is high and orders from customers who have no previous purchase history pose a high risk on defaulting on payments. Subsequently, the sorted orders are either sent to Customer Service **340** to be altered and resubmitted for validation or stored in a list of bad names in the Fraud Database **730** to be used in the gross fraud check of subsequent orders.

Alternatively, if there are generally a high number of failed orders in the sorting bin preventing sales of products, the fraud scores are analyzed and either the rules for generating the fraud score is altered or the thresholds are dynamically modified to reduce the number of orders being rejected. Furthermore, the comparator parameters in the data integrity

US 8,712,846 B2

9 10

checker **312** and gross fraud comparator may also be modified based on the results of the rejected orders to optimize order validations. By incorporating multi-level fraud checking system in the manner of the present invention, orders that would otherwise be lost can be recovered thereby increasing business transactions.

Distributor Selection

Once an order has been checked for fraud and passes as a valid order, the products in the order are checked by the Distributor Selection sub-system **330** to determine which distributor will be used to fill the order. The selection of a distributor may be determined by several different methods.

Preferably, as shown in FIG. **5**, when an order is received by the Distributor Selection sub-system **330**, the product information such as the product SKU (i.e., Stock-Keeping Unit) number and quantity is determined from the order and sent to the data input **331**. This information is then sent to each of the distributors and the distributors are polled for availability, quantity available by the distributor, and the current price for the product, for example. The information received from each of the distributors are then used by the distribution selection logic **332** to determine which distributor will fill the order. When more than one distributor can fill the order, the product information from each of the available distributors is processed by the distribution logic **332** based on the rule-based algorithm to determine which distributor will be able to best fill the order.

For example, the rules for selecting a distributor may be set to select the distributor providing the product with the maximum profit margin or within a range of margins. Alternatively, the rules may also take into consideration the type of shipping available from the distributor. For instance, if one distributor provides the product with the maximum profit margin but only has ground shipping available that may take weeks for delivery but another distributor provides next-day delivery with a lesser profit margin and the customer indicated speedy delivery, then the second distributor is selected since the first distributor, although providing the maximum profit margin, cannot fulfill the speedy delivery indicated by the customer. In other situations, the Distributor Selection sub-system **330** may be forced to select a particular distributor for a certain product regardless of other factors because of special relations with that particular distributor.

Alternatively, if the connection between some or all of the distributors cannot be established during an ordering processes, the product information stored in the Product Database **720** may be used instead of delaying the processing of the orders. As explained above, the products information is updated preferably three times during a business day. Therefore, although the data in the Product Database **720** is not as accurate as real-time data, the information is generally recent enough to fill the order.

Once a distributor selection is made, the Distribution Selection sub-system **330** forwards the order electronically to the selected distributor to fill the order. The Distributor Selection sub-system **330** then receives verification from the distributor such as customer number, warehouse information, shipment date, invoice amount, shipping cost, tracking number, etc. and stores the order information in the Order Database **740** to make it immediately available to the customer service and the customer's online account.

Credit Card Services

Credit Card Services sub-system **320** receives the orders forwarded to the distributor by the Distributor Selection sub-system **330** and forwards the total cost of the order to the Payment Processing System **40** to be charged to the customer's credit card. Alternatively, if a product has been returned, the Credit Card Services sub-system **320** processes the RMA (i.e., Returned Merchandise Authorization) and sends the request to the Payment Processing System **40** to refund the amount to the customer.

Customer Service sub-system **340** provides a feedback interface between the E-Commerce business using the transaction processor **10** of the present invention with the customers. Customer Service sub-system **340** allows the customer service representatives to access any part of the order processing being performed by the Order Processing System. Customer Service **340** provides the interface into the Order Processing System **30** by handling failed orders, sorted orders from failed orders, customer inquires to order/RMA status, and other customer service issues.

In particular, Customer Service sub-system **340** provides automated feedback to the customer. For instance, once an order has been properly processed, the Customer Service sub-system **340** will send an automated message to the customer with the order information such as customer number, shipment number, tracking number, etc. In cases where orders have failed during the processing period, Customer Service sub-system **340** automatically generates notices to the customer and/or customer service relaying that the order has failed and provides further instructions on how to correct the problem. Additionally, Customer Service sub-system **340** may be programmed to send customers in the Customer Database **710** periodic newsletters, promotional offers, exclusive sales, coupons and incentive, etc. Moreover, this periodic feedback to the customer can be highly personalized based on the information stored in the Customer Database **710** such as the customer's buying patterns.

Payment Processing System

The Payment Processing System **40** receives order/RMA information from the Order Processing System **30** in conjunction with the payment method information. For credit card orders, the Payment Processing System **40** contacts the financial institution issuing the credit card and charge the account holder for purchases or credit the account for processed RMAs. For non-credit card orders, the Payment Processing System **40** may issue bills, receive CODs (i.e., cash-on-delivery) and checks, issue refunds, process wire-transfers, etc. Moreover, the present invention may also take advantage of online leases and loans, a relatively new service in the area of e-commerce.

With respect to the online loans, once a customer is finished shopping with the Online Shopping System **20** of the present invention, the customer applies electronically to a financial institution for a loan. When the loan has been approved, the financial institution sends a loan number and the loan balance limit to the Order Processing System **30**. The Payment Processor **40** then proceeds to use the loan number as a credit card number and finishes the transaction be drawing on the approved loan from the financial institution.

With regard to the online lease, once a customer is finished shopping, the customer applies for a lease from a financial institution. When the application is approved, the financial institution sends a lease number to the Order Processing System **30**. The Payment Processor **40** then proceeds to use the lease number as a credit card number and finishes the transaction drawing on the approved balance from the leasing institution. The purchase is then shipped directly to the customer, but as with all leases, the leasing institution owns the products.

The transaction processor **10** of the present invention will be described with specific embodiments to more clearly describe the functionality of the present invention. However, equivalent components and obvious modifications within the

US 8,712,846 B2

11

ability of one with ordinary skill in the art may be used without departing from the scope of the present invention.

The transaction processor **10** of the present invention is built on industry standard equipment including Sun UltraSparc servers, Solaris operating system, Apache Web servers, and Oracle databases. Preferably, each of the systems and sub-systems are installed on a dedicated server running in parallel in a distributed processing architecture.

A customer accesses the Online Shopping System **20** via the company's Web page through a public Web server **110**, such as the customer's ISP (i.e., Internet Service Provider). Once on the company's Web page, the customer is issued a unique identification number using various techniques such as using the customer's IP (i.e., Internet Protocol) address, IP host name, personal information, etc. so that others accessing the Online Shopping System **20** do not share each others' shopping information. The customer then browses/searches the Web site (i.e., electronic catalog) for a particular product. The customer selects the product or products and the Online Shopping System **20** places the selected products in an electronic shopping cart.

At the time of checkout, the customer is asked to create a customer account asking for personal information such as name, billing address, telephone number, email address, as well as some profile information (all of which may be optional) to generate a customer account. If the customer already has an account, then the account ID is used to identify the customer and the customer is prompted for their password.

Once a customer account has been established, the order is filled out for the products to be purchased including quantity, method of payment (the credit card number may be established in the customer account so that it does not have to be inputted every time), shipping address, and method of shipment. When the order is completed, the order is passed onto the Order Processing system **30**.

The Fraud Detection sub-system **310** performs a data integrity check such as whether each of the required fields of the order form are filled out, checksum test of the credit card number, etc. If the order fails the integrity check, the customer is prompted with an error message requiring to resubmit the order with the corrections. If the order passes the integrity check, then the order undergoes the gross fraud check.

The gross fraud check determines whether the customer has a history of defaulting on payments, whether the credit card number is a valid number, or is ordering from a "blacklisted" location such as Romania or Russia. If the order fails the gross fraud check, the order is sent into a sorting bin. If the order passes the gross fraud check, the order is sent to a commercially available fraud checking service such as CyberSource®. CyberSource® processes the order information and returns a fraud score. The fraud score is then compared to a plurality of predetermined threshold **340** and used in conjunction with other fraud rule based checks. If the order fails, it is placed into the sorting bin. If the order passes, it is sent to the Distributor Selection sub-system **330** for further processing.

As for the orders in the sort bin, the failed orders are sorted between high risk and low risk orders such as whether the order was from an account holder who has good credit history from past purchases, whether the fraud score was too high because the billing address did not match the address of the credit card, etc. The plausible orders are then forwarded to the Customer Service sub-system **340** from which the Customer service representatives either contact the customer to clarify the discrepancies or override the fraud checks and place them into the processing bin to be sent to the Distributor Selection

12

sub-system **330** for further processing. The rest of the failed orders are placed in the Fraud Database **730**.

The Distributor Selection sub-system **330** sends the product information (i.e., SKU and quantity) to each of the distributors such as independent pick, pack, and ship distributors and receives information on the products such as availability and cost. The Distributor Selection sub-system **330** forwards this information to the Catalog Builder/Price Modeler **50** and profit margins are calculated. The Distributor Selection sub-system **330** then selects the distributor with, for example, the highest margin or other selected criteria for particular products and forwards the order electronically. Once the distributor fills the order, the Customer Service sub-system **340** receives or retrieves the order information such as the customer number, warehouse number, shipment date, shipment tracking information, invoice amounts, etc.

Customer Service sub-system **340** emails the customer within minutes after a valid order is received with a confirmation number. The Customer Service sub-system **340** emails the customer again when the order is shipped by the distributor or notifies the customer that the product is not available and has been placed on back order.

The preceding description has been presented only to illustrate and describe the invention. It is not intended to be exhaustive or to limit the invention to any precise form disclosed. Many modifications and variations are possible in light of the above teaching.

The preferred embodiment was chosen and described in order to best explain the principles of the invention and its practical application. The preceding description is intended to enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims.

What is claimed is:

1. A computer-implemented method for targeted product offering, the method comprising:

receiving product data for a plurality of products from a plurality of distributors for the products via a communications network;

receiving customer data from a plurality of customers, the customer data comprising location information associated with customers, the location information derived from an IP address associated with one or more of the customers;

generating, at least in part from the customer data, user-specific product offerings from the plurality of products; and

sending, by a computer, automated messages comprising the user-specific product offerings to the one or more of the customers.

2. The method of claim **1**, wherein the user-specific product offerings include at least one of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

3. The method of claim **1**, wherein the product data comprises at least one of: product description, quantity available, and price for each of the products for each of the distributors.

4. The method of claim **1**, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address, and purchase patterns.

5. The method of claim **1**, further comprising dynamically adjusting pricing of the user-specific product offerings based on at least in part information stored in the database.

6. The method of claim **1**, further comprising dynamically adjusting pricing of the user-specific product offerings based

US 8,712,846 B2

13

on a plurality of factors including at least one of: an amount of web-site traffic, sales for a particular category, and sales for a particular product.

7. The method of claim **1**, wherein the customer data further comprises location information derived from a billing address associated with one of the customers.

8. The method of claim **1**, wherein generating, at least in part from the customer data, user-specific product offerings comprises generating, at least in part from the location information of the customer data, user-specific product offerings from the plurality of products.

9. A non-transitory computer-readable medium storing a computer program product for, when executed by a processor, performing a method for targeted advertising, the method comprising:

  receiving product data for a plurality of products from a plurality of distributors for the products via a communications network;

  receiving customer data from a plurality of customers, the customer data comprising location information about customers, the location information derived from an IP address associated with one or more of the customers;

  generating, at least in part from the customer data, user-specific product offerings from the plurality of products; and

  sending automated messages comprising the user-specific product offerings to the one or more of the customers.

10. The computer-readable medium of claim **9**, wherein the user-specific product offerings include at least one of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

11. The computer-readable medium of claim **9**, wherein the product data comprises at least one of: product description, quantity available, and price for each of the products for each of the distributors.

12. The computer-readable medium of claim **9**, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address, and purchase patterns.

13. The computer-readable medium of claim **9**, further comprising dynamically adjusting pricing of the user-specific product offerings based on at least in part information stored in the database.

14. The computer-readable medium of claim **9**, further comprising dynamically adjusting pricing of the user-specific product offerings based on a plurality of factors including at least one of: an amount of web-site traffic, sales for a particular category, and sales for a particular product.

14

15. The computer-readable medium of claim **9**, wherein the customer data further comprises location information derived from a billing address associated with one of the customers.

16. A targeted advertising system, the system comprising:

  a database to receive product data for a plurality of products from a plurality of distributors for the products via a communications network, the database also receiving customer data from a plurality of customers, the customer data comprising location information associated with customers, the location information derived from an IP address associated with one or more of the customers;

  a communication interface to generate, at least in part from the customer data, user-specific product offerings from the plurality of products; and

  a computer service sub-system to send automated messages comprising the user-specific product offerings to the one or more of the customers.

17. The system of claim **16**, wherein the user-specific product offerings include at least one of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

18. The system of claim **16**, wherein the product data comprises at least one of: product description, quantity available, and price for each of the products for each of the distributors.

19. The system of claim **16**, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address, and purchase patterns.

20. The system of claim **16**, wherein the customer data further comprises location information derived from a billing address associated with one of the customers.

21. A method for targeted product offering, the method comprising:

  receiving, by a computer, product data for a plurality of products from a plurality of distributors for the products via a communications network, the product data comprising data corresponding to identical products for sale by more than one of the distributors;

  receiving customer data from a plurality of customers, the customer data comprising location information about the customers, the location information derived from an IP address associated with one or more of the customers;

  generating, by the computer, at least in part from the customer data, user-specific product offerings from the plurality of products; and

  outputting, by the computer, the user-specific product offerings for display to the one or more customers.

* * * * *

Exhibit 2

US008396743B2

(12) **United States Patent**
Alvin

(10) **Patent No.:**   **US 8,396,743 B2**
(45) **Date of Patent:**   **Mar. 12, 2013**

(54) **SENDING TARGETED PRODUCT OFFERINGS BASED ON PERSONAL INFORMATION**

(76) Inventor: **Robert S. Alvin**, Boulder Creek, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/401,827**

(22) Filed: **Feb. 21, 2012**

(65)   **Prior Publication Data**

US 2012/0150593 A1   Jun. 14, 2012

Related U.S. Application Data

(60) Division of application No. 12/589,645, filed on Oct. 26, 2009, now Pat. No. 8,374,956, which is a continuation of application No. 11/603,282, filed on Nov. 20, 2006, now abandoned, which is a continuation of application No. 09/343,550, filed on Jun. 30, 1999, now Pat. No. 7,139,731.

(51) **Int. Cl.**
   G06Q 40/00   (2012.01)
(52) **U.S. Cl.** **705/14.1**; 705/26.1; 705/38; 705/7.25; 705/1.1; 705/27.1
(58) **Field of Classification Search** 705/1.1, 705/14.1, 26.1, 38, 7.25, 50, 80, 59, 27.1,

705/34; 709/221, 223, 224; 235/380; 715/853, 715/855
See application file for complete search history.

(56)   **References Cited**

U.S. PATENT DOCUMENTS

5,742,931 A	4/1998	Spiegelhoff et al.	
6,141,653 A	10/2000	Conklin et al.	
6,460,020 B1	10/2002	Pool et al.	
6,754,636 B1	6/2004	Walker et al.	
7,580,856 B1 *	8/2009	Pliha	705/14.26

OTHER PUBLICATIONS

PurchaseSoft Procurement Intelligence, "Cashing in on e-commerce"; Year 2000, PurchaseSoft, Inc., Inc.*

* cited by examiner

Primary Examiner — John H Holly

(57)   **ABSTRACT**

Targeted products are offered over a communications network. Product data for a plurality of products from a plurality of distributors for the products is received. Customer data from a plurality of customers comprising personal information about customers is received. Using the data, at least one user-specific product offering from the plurality of products is generated. Automated messages comprising the at least one user-specific product offering to the one or more customers are then sent.

20 Claims, 5 Drawing Sheets
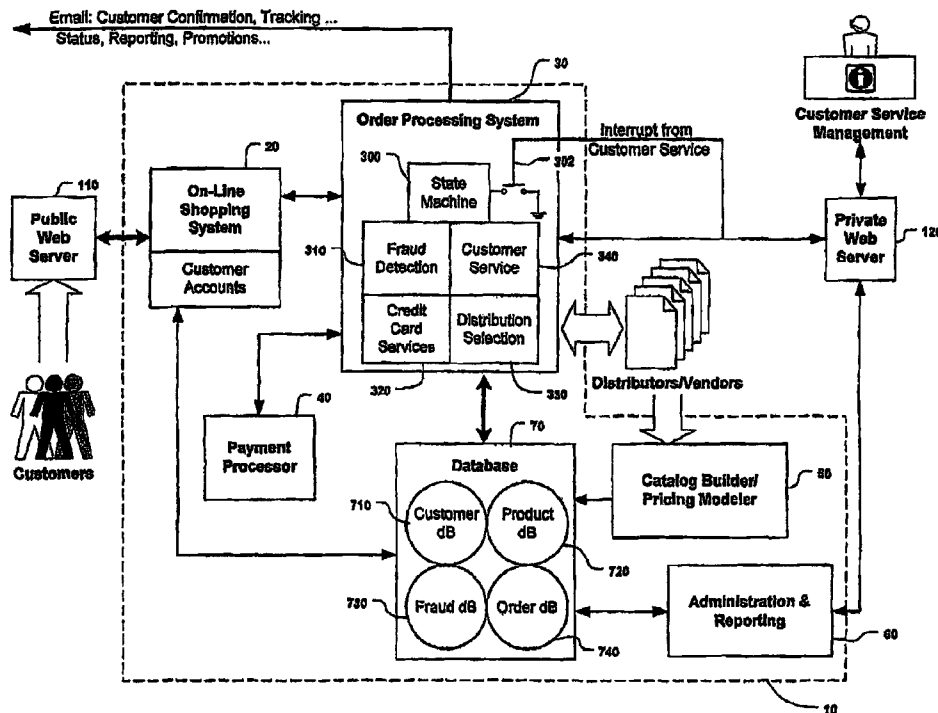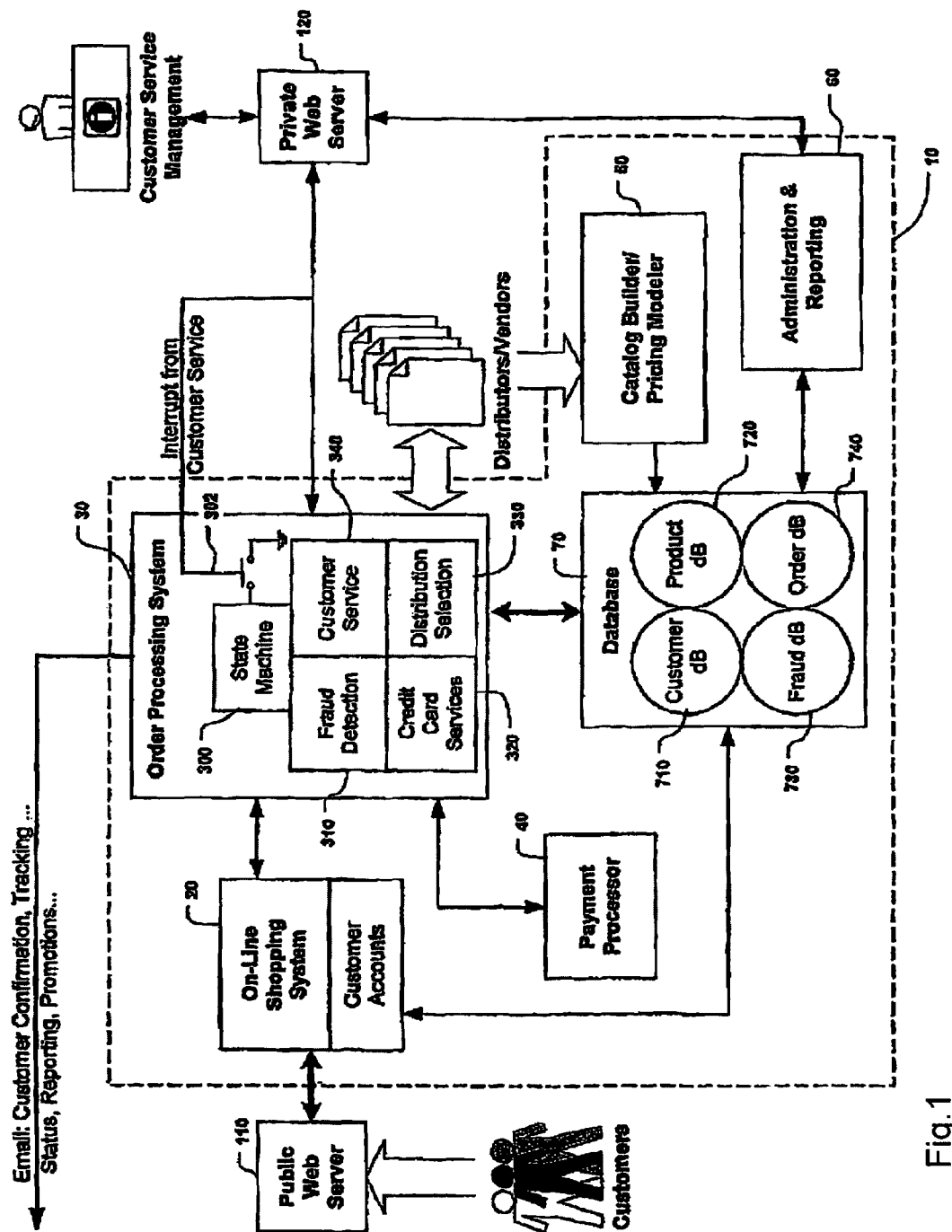
Fig. 1
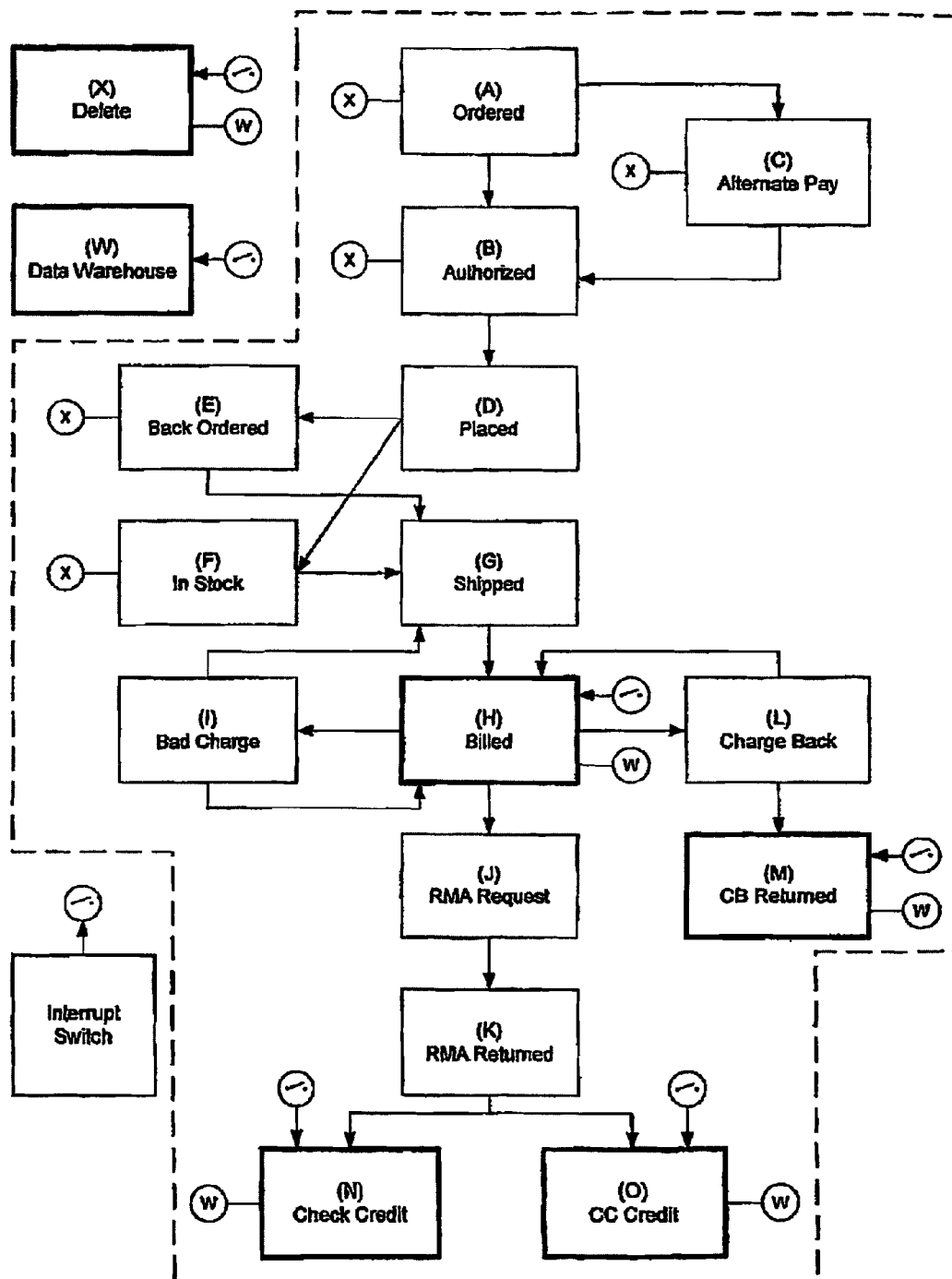
Fig. 2
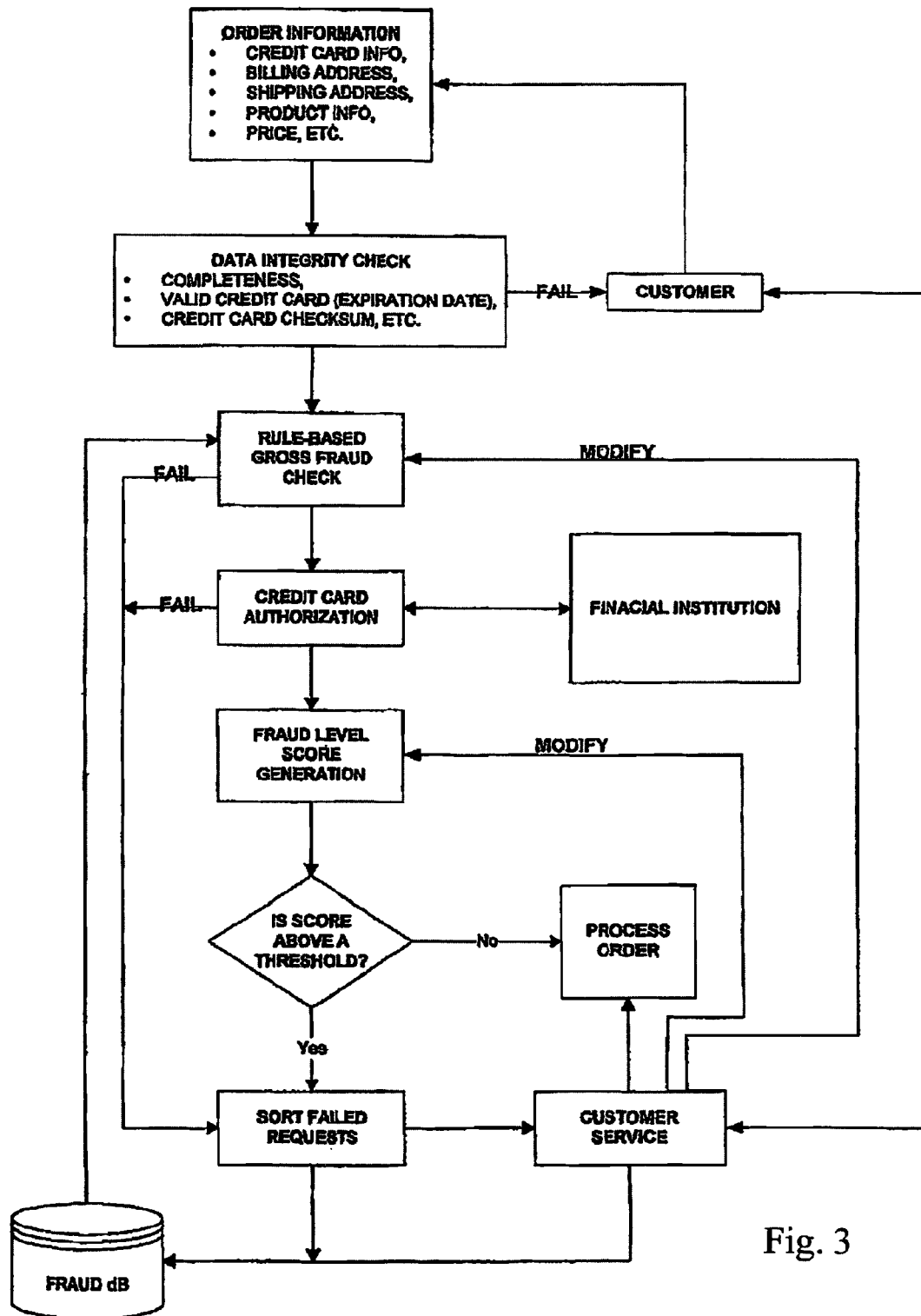
Fig. 3
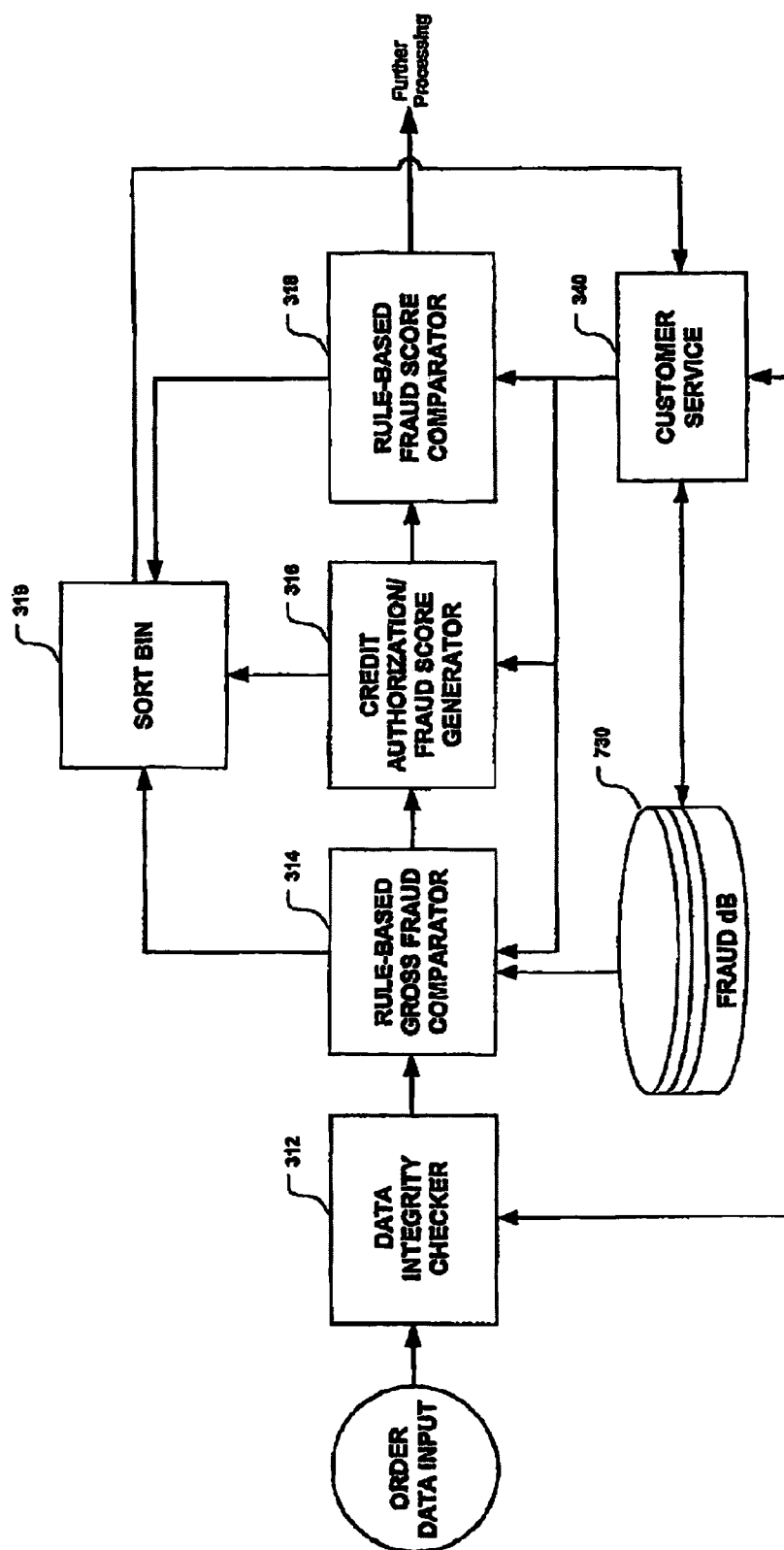
Fig. 4
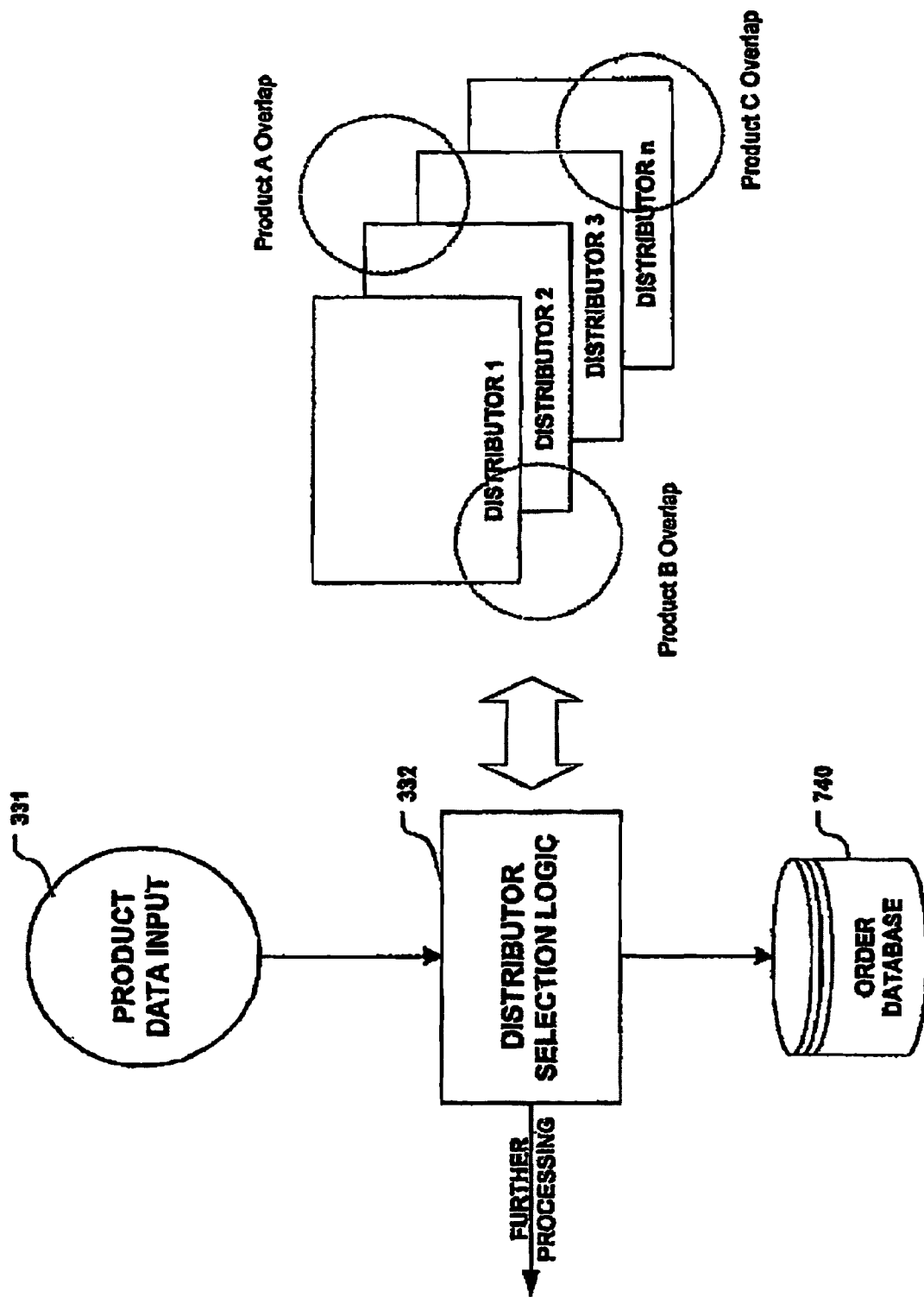
Fig. 5

US 8,396,743 B2

1

SENDING TARGETED PRODUCT OFFERINGS BASED ON PERSONAL INFORMATION

RELATED APPLICATIONS

This application is divisional of U.S. application Ser. No. 12/589,645, filed Oct. 26, 2009 now U.S. Pat. No. 8,374,956, which is a continuation of U.S. application Ser. No. 11/603, 282, filed Nov. 20, 2006, now abandoned, which is a continuation of U.S. application Ser. No. 09/343,550, filed Jun. 30, 1999, now issued as U.S. Pat. No. 7,139,731.

TECHNICAL FIELD

The present invention relates to business transactions conducted over the Internet and in particular to a transaction processor to conducting the same.

BACKGROUND

Traditionally, commodities such as computer related products, for example, have been sold primarily through retail stores and catalogs and, more recently, through telephone sales supported by infomercials and other print and media advertising. However these traditional models for selling computer related products suffer significant disadvantages.

Store-based retailers have limited shelf space due to costly inventory and real estate investment considerations. This limits the number of products store-based retailers can offer to their customers. Also, the personnel required to operate stores are expensive and can be difficult to hire and train. The physical store's need for personnel also limits the flexibility and efficiency of the sales process. The number of customers that can be served and the quality of service is dependent on the number of personnel dedicated to the sales process.

Store-based retailers also face the financial risk of carrying inventory that may quickly become obsolete. Physical possession of inventory also limits the speed at which these retailers can change their merchandise mix and offer new products. This is because a store must physically obtain, set up and display the products. Physical stores also can only serve customers in a limited geographic area because the customers must travel to the store to shop. To extend this limited reach, new stores must be opened in different geographic locations. However, the time required and the significant investments in inventory, real estate and personnel required at each new location, make it difficult to expand quickly into new geographic regions.

Catalog-based (e.g., mail-order) retailing provides only a partial solution to the disadvantages of store-based retailing. Catalogs do provide customers with the convenience of shopping from home or the office at flexible times. However, catalog merchandising is costly and wasteful because paper, printing, and postage are increasingly expensive and a large percentage of people to whom catalogs are sent will not use them. Also, the number of products catalogs can feature and the product information they can provide are limited due to catalog mailing, printing and other related expenses.

Catalogs are also very inflexible and provide only limited accessibility. In order to change products or prices, the catalog must be reprinted and redistributed which is both costly and time consuming. Furthermore, catalogs' accessibility is limited in that they are available only to those people to whom they are sent. Also, the catalog shopping experience is, in general, neither interactive nor personalized, yet requires

2

extensive personnel support and manual intervention on behalf of the retailer to take and process orders.

The more recent advent of the combination of infomercials and other advertising supporting telephone sales also provides only a partial solution. The ability to order by phone provides the same inconvenience that the catalog does. However, infomercial and other advertising is extremely expensive. They are also limited in their geographic scope. Typical media outlets serve only a relatively small geographic area. To expand the geographic scope of advertising, additional media outlets in different locations must be used. This greatly increases expenses. Advertising is also limited in duration. Expense increases drastically upon extending the term of the advertising.

The advertisements and infomercials that describe the products are also limited in the scope of products they can cover. The expense limits the size of print advertising and the duration of radio and television advertising. These limitations restrict the number of products that can be covered. They also restrict the amount of information that can be provided for the products.

Recently, the Internet has emerged as a powerful new global communications and commerce medium that represents a radical new way for people to share information and conduct business electronically. Though the Internet has been well known for several years, it has been mainly used for research and as an educational medium. Hence people were initially slow to adopt it as a common means of conducting retail commerce. However, with technology advancing such that personal computers are now an affordable commodity for the average household, more and more personal computers are being acquired for home usage. In conjunction with increased computer awareness and usage, affordability and ease of accessibility to the Internet from an average household has given birth to a new type of commercial medium referred to as Electronic Commerce (i.e., E-Commerce).

The increasing functionality, accessibility and overall usage of the Internet have made it an attractive commercial medium that can offer solutions to many of the shortcomings of the traditional retail models. For instance, the Internet has radically changed the relationship between customers. Online retailers can, from a single remote computer, interact directly and simultaneously with customers across the globe.

The Internet also eliminates the traditional retail models' limited availability and barriers to expansion. On the Internet, a store is accessible throughout the world around the clock. The limitations associated with printed catalogs are eliminated as well. There is no incremental cost associated with making Internet content available to people who will not use it. Internet also provides easy adaptability to changing market conditions and allowing an interactive, customizable retail experience.

Online retailers can respond more rapidly to customer demand by frequently modifying their product offerings, shopping interfaces and pricing, simply by modifying their Web site. Additionally, the Internet improves on the limited amount of information that can be conveyed in the catalog and advertising/telephone sales models of retail sales. Web sites are inexpensive relative to the number of potential customers they reach, allowing much more information can be provided on a Web site than in any advertisement.

However, even with the advantages that are associated with the usage of the Internet as a commercial medium, there are still drawbacks in the currently existing E-Commerce retail businesses. In particular, most E-Commerce retail businesses mainly use the Internet and Web pages as an advertising medium to replace the previous catalog/infomercial type

US 8,396,743 B2

3

advertisements. Although some of the businesses have begun accepting product orders online via email or Web pages, the current E-Commerce businesses for the most part have adopted a hybrid business model in which the traditional business models are coupled with E-Commerce business practices.

For instance, the usage of the Internet has replaced a few of the traditional business practices such as advertising and order processing, but most of the so-called E-Commerce retail businesses of the prior art still operate by maintaining an inventory. That is to say, the current online businesses still maintain inventories in warehouses that store the merchandise to be sold. As described above, the costs associated with such business practices are high, especially in the computer related products market where their relatively short life cycle and the rapid adoption of new technologies and products make the traditional inventory store and catalog sales models particularly problematic. If the computer products are not sold in a relatively short period of time, the unsold merchandise will become obsolete due to the fast pace in which technology is evolving.

Furthermore, some of the prior art E-Commerce systems are prone to unnecessary down-time due to dependence of out-sourced services resulting in loss of sales during the down-time period. In particular, the primary use of credit cards as the preferred method of payment over the Internet has made checking for credit card fraud a necessity. To that end, almost all E-Commerce businesses are connected to a financial service center for processing fraud checks. However, if the connection to the service center is down for any reason, process of sales is halted until a fraud check can be performed. Additionally, most E-Commerce businesses rely exclusively on the results of the commercially available fraud check institutions. If the criteria set by the fraud check institution are too high, then sales that would otherwise have been profitable are lost.

SUMMARY

The above-mentioned needs are met with a method, a computer program product, and a system for targeted product offerings.

Targeted products are offered over a communications network. Product data for a plurality of products from a plurality of distributors for the products is received. Customer data from a plurality of customers comprising personal information about customers is received. Using the data, at least one user-specific product offering from the plurality of products is generated. Automated messages comprising the at least one user-specific product offering to the one or more customers are then sent.

Additional objects, advantages and novel features of the invention will be set forth in the description which follows or may be learned by those skilled in the art through reading these materials or practicing the invention. The objects and advantages of the invention may be achieved through the means recited in the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate the present invention and are a part of the specification. Together with the following description, the drawings demonstrate and explain the principles of the present invention.

FIG. 1 is a block diagram showing the overall system of the present invention.

4

FIG. 2 is a state diagram of the order processing of the present invention.

FIG. 3 is a flow diagram showing the fraud processing according to the present invention.

FIG. 4 is a logic block diagram for performing the multi-level fraud processing according to the present invention.

FIG. 5 is a flow diagram showing the distributor selection processing according to the present invention.

DETAILED DESCRIPTION

Using the drawings, the preferred embodiments of the present invention will now be explained. As shown in FIG. 1, the Internet business transaction processor 10 of the present invention has a distributed processing design allowing the processing load to be distributed among multiple parallel servers. The Internet business transaction processor according to the present invention is comprised of an Online Shopping System 20, Order Processing System 30, Payment Processing System 40, Catalog Builder/Price Modeler 50, and Administration System 60. The transaction processor 10 of the present invention also includes a main database 70 comprised of a Customer Database 710, Products Database 720, Fraud Database 730, and Order Database 740.

According to the present invention, a customer accesses the Online Shopping System 20 via a public Web server 110 to obtain product information available for purchases, set up a customer account, check order status, etc. The Order Processing System 30 receives the product order requests and processes the orders to check for availability with multiple distributors, orders the products based on pricing information, performs credit card validations, etc. The Payment Processing System 40 processes the method of payment once the orders have been properly processed. The Catalog Builder/Price Modeler 50 builds information of the products offered by the distributors to be made available by the Online Shopping System 20 to the customer as well as the prices at which these products will be offered based on a pricing model to be described in detail below. Customer service representatives and managers have access to all of the information in the database via the Administration System 60 through a dedicated secure Web server 120 available only to authorized personnel. The Administration System 60 is used to produce reports of sales, reconcile order discrepancies, manually adjust prices, approve credit, etc. Functionality of each of the sub-systems will now be explained in detail.

Online Shopping System

The Online Shopping System 20 is the main interface between the customer and the E-Commerce business and is primarily responsible for providing the overall online shopping experience to the customer. The Online Shopping System 20 of the present invention provides an electronic catalog of available products stored in the Products Database 720 along with the price of the product. This information is generated by the Catalog Builder/Price Modeler 50 to be descried in detail below.

The electronic catalog is a Web page, for example, that dynamically displays product information from the Products Database 720. Consequently, the electronic catalog is always up to date with the most recent product information and does not suffer from the same shortcomings as that of the prior art cataloging systems. Furthermore, because each product is displayed as a dynamic variable, a new catalog does not have to be generated every time the Product Database 70 is updated. Only the updated product information will be changed in the catalog.

US 8,396,743 B2

5

In conjunction with the electronic catalog, the Online Shopping System **20** provides an electronic shopping cart that keeps record of each item marked to be purchased by the customer and provides a finalized shopping list and the total amount purchased at the end of a shopping session which may include appropriate taxes and shipping/handling charges.

The Online Shopping System **20** is also used to create customer accounts with such information as customer name, billing address, telephone number, email address, etc. and this information is stored in the Customer Database **710**. Such information is used by the transaction processor **10** for billing, order notification, promotional/incentive distribution, etc. A customer may also access the Online Shopping System **20** to track the status of previous orders and returned merchandise, send inquiries to Customer Service, etc. Furthermore, customer accounts can be used to generate customized portfolios based on purchase patterns of individuals to provide targeted advertising, purchase incentives such as electronic coupons and rebates, specialized promotions and competitive pricing of high demand products.

Catalog Builder/Price Modeler

As described generally above, the Catalog Builder/Price Modeler **50** builds the Products Database **720** with available products from the distributors as well as the sales price for each product. With regard to the catalog generation, the Catalog Builder/Price Modeler **50** receives product information from multiple distributors. The product information includes but are not limited to product description, quantity available, and price for the product.

Access to the product information from the distributors may be accomplished by Telnet, FTP (File Transfer Protocol), industry standard EDI (Electronic Data Interchange), or any other appropriate communication protocol including specialized client/server software provided used by the distributors.

Downloading of the product information from the distributors is scheduled to run automatically by the Catalog Builder/ Price Modeler **50** so that no human interaction is necessary unless it is desired to do so. The product information is preferably updated continually throughout the day as updated product information becomes available from the distributors or based on other preselected triggers. For example, all the distributor data may be updated during certain times of the day. Data for some selected distributors may be updated hourly while product data of others may be updated every time the web page is viewed for that product or after the product is ordered. As the communications technology becomes more advanced, it may be possible to maintain a continuous connection to the distributors' network thereby obtaining real-time status of each product offered by the distributor.

For other suppliers of products that may not have such communication capabilities or does not make economic sense to provide such continuous update of product information, an alternative system may be provided for updating/accessing product information. For instance, small distributors or individual vendors may operate through a secure web site to update their product information, receive order information from the transaction processor of the present invention, and provide shipping/tracking information of their products from their companies.

Once the product information from each of the distributors is collected, the Catalog Builder/Price Modeler **50** sorts the product information to generate the electronic catalog. The Catalog Builder/Price Modeler **50** of the present invention generates multiple catalogs from the same system and allows the Online Shopping System **20** to dynamically display user specific interfaces. The Catalog Builder/Price Modeler **50**

6

generates catalogs with different visual presentations (e.g., color, fonts, graphics, advertising, etc.) and product offerings depending on the user accessing the Online Shopping System **20** based on the user-specific information via criteria-specific templates.

For example, when a student accesses the Online Shopping System **20** of the present invention as a potential customer, the Online Shopping System **20** displays a catalog of mixed products appropriate for students with academic pricing. Alternatively, a business person who accesses the Online Shopping System **20** of the present invention may see a catalog of products appropriate for his or her business with available corporate discounts for that product. This way, a single system is maintained that looks and functions like many different catalog shopping systems.

The pricing model used by the Catalog Builder/Price Modeler **50** of the present invention is an intelligent rule-based algorithm such as an AI (i.e., Artificial Intelligence) program generates a competitive price for a product based on price of the product offered from the distributors, any specials that are being promoted for the product, and cost/profit margins from the sale of the product to the customer. Simply stated, the price of the product is a function of the profit margin. Default margins are set in the rule-based programming of the pricing model, but due to its adaptability the Catalog Builder/Price Modeler **50** may automatically adjust the margins based on the rules of the pricing model and the pricing information obtained from the distributors. Further, the rules of the pricing model and setting of margins may be manually modified using the Administration System **60** to be explained in detail below.

The Catalog Builder/Price Modeler **50** of the present invention uses a plurality of margins to determine the sales price of a product depending on which category the product is in. For instance, the margin for the products in the first category may be set to 10%+cost since this is a category of products that the customer would most likely buy even though the price may be a little bit high. On the other hand, the margin for the products in the second category may be set to 2.5%+ cost in order to provide a competitive price for high demand products. Further, the margin for the products in the third category may be set to 0%+cost due to promotionals of discontinued products, for example.

The Catalog Builder/Price Modeler **50** may be used to obtain initial sale prices of the products to be listed in the electronic catalog. Furthermore, the Catalog Builder/Price Modeler **50** may also adjust the pricing dynamically based on other system data that may change throughout the day. For example, the price may be adjusted based on the amount of web site traffic, sales for a particular vendor, category, or SKU, and even the time of day. Subsequently, the Catalog Builder/Price Modeler **50** may be used in conjunction with the Order Processing System **30** to be described in detail hereinafter to select a distributor to fill the order for a selected product using real-time data at the time of purchase. In this way, prices of the products in the electronic catalog can be dynamically changed based on the current market for these products.

Order Processing System

The Order Processing System **30** of the present invention processes the orders passed from the Online Shopping System **20**. The Order Processing System **30** of the present invention is comprised of four basic sub-systems: Fraud Detection **310**, Credit Card Services **320**, Distributor Selection **330**, and Customer Service **340**. The overall functionality of the Order Processing System **30** is described hereinafter.

US 8,396,743 B2

7

When an order for a selected product is received, the Order Processing System **30** first determines whether the order is a valid order by the Fraud Detection sub-system **310**. If the order is valid, then the order is sent to the Distributor Selection sub-system **330** to determine firstly if the product ordered is available and secondly from which distributor the product will be supplied. Once a distributor is chosen the order is fulfilled with the distributor. After confirmation of product shipment, the order is sent to the Payment Processing System **40** via the Credit Card Services sub-system **320** to charge the customer's credit card for the purchase. The Customer Service sub-system **340** monitors each of the ordering processes and can intervene anywhere in the process if warranted.

Moreover, the Order Processing System **30** of the present invention is driven as a state machine **300**. As such, a purchase order during processing enters predetermined states as shown in FIG. **2**. Interrupt switch **302** is operable to interrupt state machine **300** to facilitate selective tracking of an order during processing to determine the status of any purchase order during processing. The intervention of the state machine **300** also allows the ability to force an order into a particular state or manually set certain flags by hand. As such, the state machine **300** of the present invention allows enhancements to the state diagram for manageable changes to the Order Processing System **30**. Additions or deletions of new states, arcs, and conditions change the paths an order takes through the order processing operation. As will be hereinafter more fully explained, a purchase order during processing under control of state machine **300** can only come to rest at a predetermined number of processing stations or states (e.g., H, M, N, O, X, etc.) as shown in FIG. **2**.

Each block represents a state in which a purchase order being processed by the Order Processing System **30** can occupy. According to the present invention, a purchase order being processed by the Order Processing System **30** must move from one state to the other except in the states indicated in bold, e.g., states (H), (M), (N), (O), (X), and (W). These are the only states according to the present invention in which a purchase order can be at rest at a final destination. All other states are transient and the order will eventually move to the next state, or eventually flagged with an error condition which triggers an alarm to customer service indicating an abnormality in the order processing. For example, an order that has been placed for a product in stock but never shows up as being shipped (i.e., stuck in the "in-stock" state) times out after a predetermined time period and is flagged as an error. With the Order Processing System **30** of the present invention functioning as a state machine as described above, a purchase order can only be in predetermined states at any given time thereby facilitating ease of tracking of the status of an order.

A detailed description of each of the sub-systems is provided hereinafter.

Multi-Level Fraud Detection

The Fraud Detection sub-system **310** of the present invention is a multi-level fraud checking system used to determine if an order is a valid order. As shown in FIG. **1**, when an order is passed from the Online Shopping System **20**, the Order Processing System **30** receives the order information such as credit card information, billing address, shipping address, quantity of selected products, sales prices of the products, etc. This order information is initially passed through the Fraud Detection sub-system **310**.

As shown in FIG. **4**, the logic blocks of the Fraud Detection sub-system **310** includes a data integrity checker **312**, a rule-based gross fraud comparator **314**, a credit authorization/fraud score generator **316**, and rule-based fraud score comparator **318**. The interaction of these logic blocks will be explained with reference to the flow diagram as shown in FIG. **3**.

8

Once the order data is input into the Fraud Detection sub-system **310**, the data integrity checker **312** initially performs a data integrity check on the order information for completeness such as billing address information, shipping address information, and method of payment. For example, credit card information is checked to verify that the credit card is not yet expired for credit card purchases. If the data integrity check fails on the order, the customer is notified of the incomplete portions of the order for correction. Once the order passes the data integrity check, the order then proceeds to the gross fraud comparator **314**.

Gross fraud check involves searching the Fraud Database **730** internal to the transaction processor **10** of the present invention for history of bad credit by the customer submitting the order. The gross fraud check of the present invention acts as an initial filter for rejecting obvious fraudulent orders such as orders from "black-listed" customers in the Fraud Database **730** with previous histories of bad credit, orders from counties other than the United States under economic crisis, etc. If an order fails the gross fraud check, the order is passed to Customer Service **340** and the customer is immediately notified of the reasons why the order cannot be processed. If, on the other hand, the order passes the gross fraud check, the order is then checked for credit card authorization from a financial institution, such as a commercially available fraud check service and AVS (Address Verification Service).

Based on the information received from the financial institution, a fraud level score, for example, is generated by the credit authorization/fraud score generator **316**. The fraud level score is a grading system that indicates the level of risk the order will pose to the business by processing the order. The score is then compared with several predetermined thresholds by the rule-based fraud score comparator **318** and takes different actions based on the comparison to these multiple thresholds. If the score is below the minimal threshold, the order is sent for further processing. If the score is above the maximum threshold, the order is sent into sorting bin **319**. The intermediate thresholds allow the order to pass through various intermediate steps while triggering flags for each failed threshold comparison. This allows the failed order to be characterized by several types of failures given a total overall score. The sorting bin **319** of the present invention acts as a buffer to minimize discarded orders. According to the present invention, a dynamic sorting procedure is performed on the rejected orders stored in the sorting bin **319**.

The failed orders in the sorting bin **319** are analyzed for reasons why the fraud level score was so high. Failed orders are analyzed for previous purchases by the customer, whether the customer is an account holder, etc. and sorted between high risk and low risk orders. For instance, orders from repeat customers who otherwise have a good history of previous purchases, for example, are low risk orders even though the fraud score is high and orders from customers who have no previous purchase history pose a high risk on defaulting on payments. Subsequently, the sorted orders are either sent to Customer Service **340** to be altered and resubmitted for validation or stored in a list of bad names in the Fraud Database **730** to be used in the gross fraud check of subsequent orders.

Alternatively, if there are generally a high number of failed orders in the sorting bin preventing sales of products, the fraud scores are analyzed and either the rules for generating the fraud score is altered or the thresholds are dynamically modified to reduce the number of orders being rejected. Furthermore, the comparator parameters in the data integrity

US 8,396,743 B2

9

checker **312** and gross fraud comparator may also be modified based on the results of the rejected orders to optimize order validations. By incorporating multi-level fraud checking system in the manner of the present invention, orders that would otherwise be lost can be recovered thereby increasing business transactions.

Distributor Selection

Once an order has been checked for fraud and passes as a valid order, the products in the order are checked by the Distributor Selection sub-system **330** to determine which distributor will be used to fill the order. The selection of a distributor may be determined by several different methods.

Preferably, as shown in FIG. **5**, when an order is received by the Distributor Selection sub-system **330**, the product information such as the product SKU (i.e., Stock-Keeping Unit) number and quantity is determined from the order and sent to the data input **331**. This information is then sent to each of the distributors and the distributors are polled for availability, quantity available by the distributor, and the current price for the product, for example. The information received from each of the distributors are then used by the distribution selection logic **332** to determine which distributor will fill the order. When more than one distributor can fill the order, the product information from each of the available distributors is processed by the distribution logic **332** based on the rule-based algorithm to determine which distributor will be able to best fill the order.

For example, the rules for selecting a distributor may be set to select the distributor providing the product with the maximum profit margin or within a range of margins. Alternatively, the rules may also take into consideration the type of shipping available from the distributor. For instance, if one distributor provides the product with the maximum profit margin but only has ground shipping available that may take weeks for delivery but another distributor provides next-day delivery with a lesser profit margin and the customer indicated speedy delivery, then the second distributor is selected since the first distributor, although providing the maximum profit margin, cannot fulfill the speedy delivery indicated by the customer. In other situations, the Distributor Selection sub-system **330** may be forced to select a particular distributor for a certain product regardless of other factors because of special relations with that particular distributor.

Alternatively, if the connection between some or all of the distributors cannot be established during an ordering processes, the product information stored in the Product Database **720** may be used instead of delaying the processing of the orders. As explained above, the products information is updated preferably three times during a business day. Therefore, although the data in the Product Database **720** is not as accurate as real-time data, the information is generally recent enough to fill the order.

Once a distributor selection is made, the Distribution Selection sub-system **330** forwards the order electronically to the selected distributor to fill the order. The Distributor Selection sub-system **330** then receives verification from the distributor such as customer number, warehouse information, shipment date, invoice amount, shipping cost, tracking number, etc. and stores the order information in the Order Database **740** to make it immediately available to the customer service and the customer's online account.

Credit Card Services

Credit Card Services sub-system **320** receives the orders forwarded to the distributor by the Distributor Selection subsystem **330** and forwards the total cost of the order to the Payment Processing System **40** to be charged to the customer's credit card. Alternatively, if a product has been returned,

10

the Credit Card Services sub-system **320** processes the RMA (i.e., Returned Merchandise Authorization) and sends the request to the Payment Processing System **40** to refund the amount to the customer.

Customer Service sub-system **340** provides a feedback interface between the E-Commerce business using the transaction processor **10** of the present invention with the customers. Customer Service sub-system **340** allows the customer service representatives to access any part of the order processing being performed by the Order Processing System. Customer Service **340** provides the interface into the Order Processing System **30** by handling failed orders, sorted orders from failed orders, customer inquires to order/RMA status, and other customer service issues.

In particular, Customer Service sub-system **340** provides automated feedback to the customer. For instance, once an order has been properly processed, the Customer Service sub-system **340** will send an automated message to the customer with the order information such as customer number, shipment number, tracking number, etc. In cases where orders have failed during the processing period, Customer Service sub-system **340** automatically generates notices to the customer and/or customer service relaying that the order has failed and provides further instructions on how to correct the problem. Additionally, Customer Service sub-system **340** may be programmed to send customers in the Customer Database **710** periodic newsletters, promotional offers, exclusive sales, coupons and incentive, etc. Moreover, this periodic feedback to the customer can be highly personalized based on the information stored in the Customer Database **710** such as the customer's buying patterns.

Payment Processing System

The Payment Processing System **40** receives order/RMA information from the Order Processing System **30** in conjunction with the payment method information. For credit card orders, the Payment Processing System **40** contacts the financial institution issuing the credit card and charge the account holder for purchases or credit the account for processed RMAs. For non-credit card orders, the Payment Processing System **40** may issue bills, receive CODs (i.e., cash-on-delivery) and checks, issue refunds, process wire-transfers, etc. Moreover, the present invention may also take advantage of online leases and loans, a relatively new service in the area of e-commerce.

With respect to the online loans, once a customer is finished shopping with the Online Shopping System **20** of the present invention, the customer applies electronically to a financial institution for a loan. When the loan has been approved, the financial institution sends a loan number and the loan balance limit to the Order Processing System **30**. The Payment Processor **40** then proceeds to use the loan number as a credit card number and finishes the transaction be drawing on the approved loan from the financial institution.

With regard to the online lease, once a customer is finished shopping, the customer applies for a lease from a financial institution. When the application is approved, the financial institution sends a lease number to the Order Processing System **30**. The Payment Processor **40** then proceeds to use the lease number as a credit card number and finishes the transaction drawing on the approved balance from the leasing institution. The purchase is then shipped directly to the customer, but as with all leases, the leasing institution owns the products.

The transaction processor **10** of the present invention will be described with specific embodiments to more clearly describe the functionality of the present invention. However, equivalent components and obvious modifications within the

US 8,396,743 B2

11

ability of one with ordinary skill in the art may be used without departing from the scope of the present invention.

The transaction processor **10** of the present invention is built on industry standard equipment including Sun UltraSparc servers, Solaris operating system, Apache Web servers, and Oracle databases. Preferably, each of the systems and sub-systems are installed on a dedicated server running in parallel in a distributed processing architecture.

A customer accesses the Online Shopping System **20** via the company's Web page through a public Web server **110**, such as the customer's ISP (i.e., Internet Service Provider). Once on the company's Web page, the customer is issued a unique identification number using various techniques such as using the customer's IP (i.e., Internet Protocol) address, IP host name, personal information, etc. so that others accessing the Online Shopping System **20** do not share each others' shopping information. The customer then browses/searches the Web site (i.e., electronic catalog) for a particular product. The customer selects the product or products and the Online Shopping System **20** places the selected products in an electronic shopping cart.

At the time of checkout, the customer is asked to create a customer account asking for personal information such as name, billing address, telephone number, email address, as well as some profile information (all of which may be optional) to generate a customer account. If the customer already has an account, then the account ID is used to identify the customer and the customer is prompted for their password.

Once a customer account has been established, the order is filled out for the products to be purchased including quantity, method of payment (the credit card number may be established in the customer account so that it does not have to be inputted every time), shipping address, and method of shipment. When the order is completed, the order is passed onto the Order Processing system **30**.

The Fraud Detection sub-system **310** performs a data integrity check such as whether each of the required fields of the order form are filled out, checksum test of the credit card number, etc. If the order fails the integrity check, the customer is prompted with an error message requiring to resubmit the order with the corrections. If the order passes the integrity check, then the order undergoes the gross fraud check.

The gross fraud check determines whether the customer has a history of defaulting on payments, whether the credit card number is a valid number, or is ordering from a "blacklisted" location such as Romania or Russia. If the order fails the gross fraud check, the order is sent into a sorting bin. If the order passes the gross fraud check, the order is sent to a commercially available fraud checking service such as CyberSource®. CyberSource® processes the order information and returns a fraud score. The fraud score is then compared to a plurality of predetermined threshold **340** and used in conjunction with other fraud rule based checks. If the order fails, it is placed into the sorting bin. If the order passes, it is sent to the Distributor Selection sub-system **330** for further processing.

As for the orders in the sort bin, the failed orders are sorted between high risk and low risk orders such as whether the order was from an account holder who has good credit history from past purchases, whether the fraud score was too high because the billing address did not match the address of the credit card, etc. The plausible orders are then forwarded to the Customer Service sub-system **340** from which the Customer service representatives either contact the customer to clarify the discrepancies or override the fraud checks and place them into the processing bin to be sent to the Distributor Selection

12

sub-system **330** for further processing. The rest of the failed orders are placed in the Fraud Database **730**.

The Distributor Selection sub-system **330** sends the product information (i.e., SKU and quantity) to each of the distributors such as independent pick, pack, and ship distributors and receives information on the products such as availability and cost. The Distributor Selection sub-system **330** forwards this information to the Catalog Builder/Price Modeler **50** and profit margins are calculated. The Distributor Selection subsystem **330** then selects the distributor with, for example, the highest margin or other selected criteria for particular products and forwards the order electronically. Once the distributor fills the order, the Customer Service sub-system **340** receives or retrieves the order information such as the customer number, warehouse number, shipment date, shipment tracking information, invoice amounts, etc.

Customer Service sub-system **340** emails the customer within minutes after a valid order is received with a confirmation number. The Customer Service sub-system **340** emails the customer again when the order is shipped by the distributor or notifies the customer that the product is not available and has been placed on back order.

The preceding description has been presented only to illustrate and describe the invention. It is not intended to be exhaustive or to limit the invention to any precise form disclosed. Many modifications and variations are possible in light of the above teaching.

The preferred embodiment was chosen and described in order to best explain the principles of the invention and its practical application. The preceding description is intended to enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims.

What is claimed is:

1. A computer-implemented method for targeted product offering, the method comprising:

receiving product data for a plurality of products from a plurality of distributors for the products via a communications network;

receiving customer data from a plurality of customers, the customer data comprising location information associated with customers, the customer location information derived from an IP address associated with the customer;

generating, at least in part from the personal information concerning a customer location, at least one user-specific product offering from the plurality of products; and

sending, by a computer, automated messages comprising the at least one user-specific product offering to the one or more customers.

2. The method of claim **1**, wherein the at least one user-specific product offering includes at least of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

3. The method of claim **1**, wherein the product data comprises product description, quantity available and price for each of the products for each of the distributors.

4. The method of claim **1**, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address and purchase patterns.

5. The method of claim **1**, further comprising:

dynamically adjusting pricing of the product offerings based on at least in part information stored in the database.

6. The method of claim **1**, further comprising dynamically adjusting pricing of the product offerings in the electronic

US 8,396,743 B2

13

catalogs based on a plurality of factors including at least one of: an amount of web-site traffic, sales for a particular category, and sales for a particular product.

7. The method of claim **1**, further comprising:
deriving the customer location data from a billing address associated with the customer.

8. A non-transitory computer-readable medium storing a computer program product for, when executed by a processor, performing a method for targeted advertising, the method comprising:
receiving product data for a plurality of products from a plurality of distributors for the products via a communications network;
receiving customer data from a plurality of customers, the customer data comprising location information about customers, the customer location information derived from an IP address associated with the customer;
generating, at least in part from the personal information concerning a customer location, at least one user-specific product offering from the plurality of products; and
sending automated messages comprising the at least one user-specific product offering to the one or more customers.

9. The computer-readable medium of claim **8**, wherein the at least one user-specific product offering includes at least of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

10. The computer-readable medium of claim **8**, wherein the data comprises product description, quantity available and price for each of the products for each of the distributors.

11. The computer-readable medium of claim **8**, wherein the customer data including customer name, billing address, email address and purchase patterns.

12. The computer-readable medium of claim **8**, further comprising dynamically adjusting pricing of the product offerings based on at least in part information stored in the database.

13. The computer-readable medium of claim **8**, further comprising dynamically adjusting pricing of the product offerings in the electronic catalogs based on a plurality of factors including at least one of: an amount of web-site traffic, sales for a particular category, and sales for a particular product.

14. The computer-readable medium of claim **8**, wherein the plurality of distributors comprise a plurality of individual vendors.

14

15. A targeted advertising system, the system comprising:
a database to receive product data for a plurality of products from a plurality of distributors for the products via a communications network, the database also receiving customer data from a plurality of customers, the customer data comprising location information associated with customers, the customer location information derived from an IP address associated with the customer;
a communication interface to generate, at least in part from the location information, at least one user-specific product offering from the plurality of products; and
a computer service sub-system to send automated messages comprising the at least one user-specific product offering to the one or more customers.

16. The system of claim **15**, wherein the at least one user-specific product offering includes at least of: a coupon, an electronic coupon, a promotional offer, an exclusive sale, an incentive, a rebate, and competitive pricing.

17. The system of claim **15**, wherein the product data comprises product description, quantity available and price for each of the products for each of the distributors.

18. The system of claim **15**, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address and purchase patterns.

19. The system of claim **15**, further comprising at least one of:
deriving the customer location data from a billing address associated with the customer.

20. A method for targeted product offering, the method comprising:
receiving, by a computer, product data for a plurality of products from a plurality of distributors for the products via a communications network, the product data comprising data corresponding to identical products for sale by more than one of the distributors;
receiving customer data from a plurality of customers, the customer data comprising location information about customers, the customer location information derived from an IP address associated with the customer;
generating, at least in part from the personal information, at least one user-specific product offering from the plurality of products; and
output the at least one user-specific product offering for display to the one or more customers.

* * * * *

EXHIBIT 3

US 8,712,846

Analysis of Infringement of U.S. Patent No. 8,712,846 by The Gap, Inc.
(Based on Public Information Only)

Consolidated Transaction Processing LLC ("CTP") provides this preliminary and exemplary infringement analysis with respect infringement of U.S. Patent No. 8,712,846, entitled "Sending Targeted Product Offerings Based on Personal Information" (the "'846 patent") by The Gap, Inc. ("Gap"). The following chart illustrates an exemplary analysis regarding infringement by Gap commercial web site accessible through the base URL, along with any hardware and/or software for provisioning that web site (collectively, the "Infringing Instrumentalities").
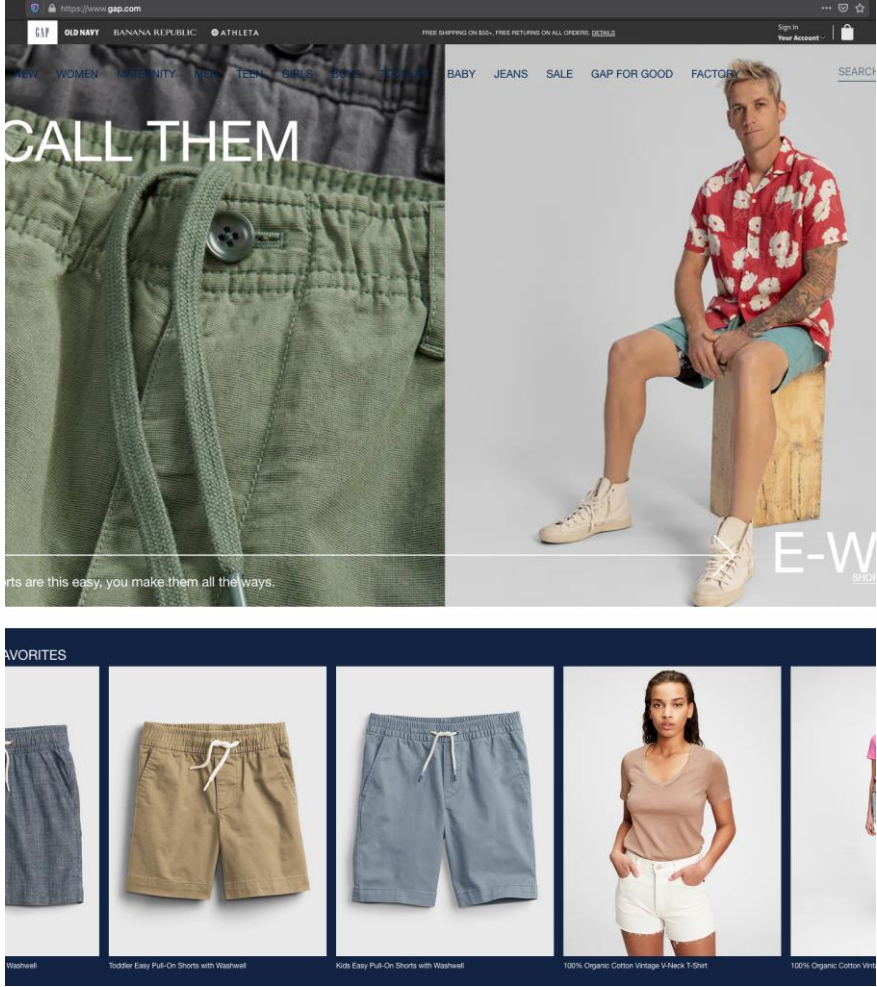
The analysis set forth below is based only upon information from publicly available resources regarding the Infringing Instrumentalities, as Gap has not yet provided any non-public information.

Unless otherwise noted, CTP contends that Gap directly infringes the '846 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Infringing Instrumentalities. The following exemplary analysis demonstrates that infringement.

Unless otherwise noted, CTP believes and contends that each element of each claim asserted herein is literally met through Gap's provision of the Infringing Instrumentalities. However, to the extent that Gap attempts to allege that any asserted claim element is not literally met, CTP believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Infringing Instrumentalities, CTP did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Infringing Instrumentalities, as set forth herein. In each instance, the identified feature of the Infringing Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

CTP notes that the present claim chart and analysis are necessarily preliminary in that CTP has not obtained substantial discovery from Gap nor has Gap disclosed any detailed analysis for its non-infringement position, if any. Further, CTP does not have the benefit of claim construction or expert discovery. CTP reserves the right to supplement and/or amend the positions taken in this preliminary and exemplary infringement analysis, including with respect to literal infringement and infringement under the doctrine of equivalents, if and when warranted by further information obtained by CTP, including but not limited to information adduced through information exchanges between the parties, fact discovery, claim construction, expert discovery, and/or further analysis.

US 8,712,846

Claims	[INFRINGING INSTRUMENTALITIES]
1. A computer-implemented method for targeted product offering, the method comprising:	The Gap Ecommerce System employs a computer-implemented method for targeted product offering.

2

US 8,712,846

Receiving product data for a plurality of products	The Gap Ecommerce System receives product data from a plurality of products.

3
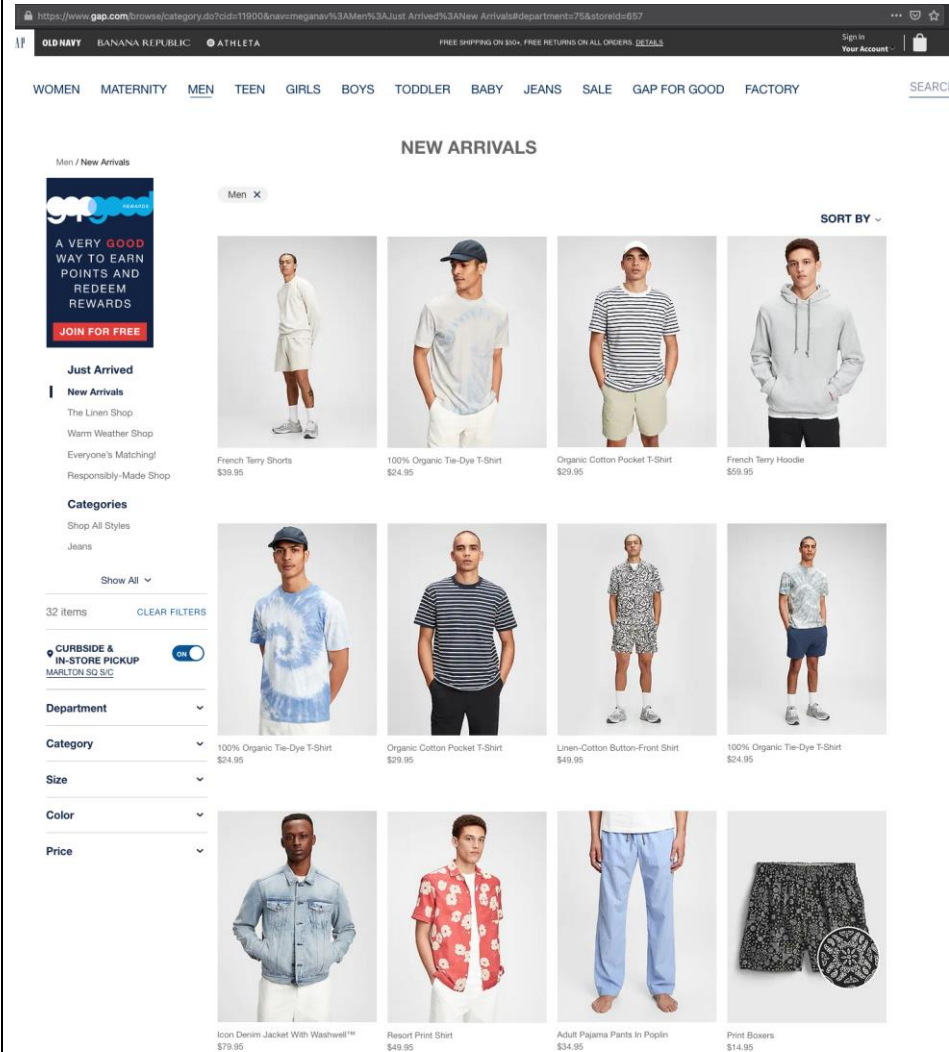
US 8,712,846

	This data can include some or all of the following: product description, price(s), size(s), color(s), specifications, flavor, shipping information, customer reviews, ratings, photos, model numbers, links, store availability, related products, label information, materials, etc.

US 8,712,846

	https://www.gap.com/browse/product.do?pid=6705040320002&cid=11900&pcid=11900&vid=1&nav=meganav%3AMen%3AJust+Arrived%3ANew+Arrivals&storeId=657&cpos=2&cexp=1567&kcid=CategoryIDs%3D11900&cvar=11747&ctype=Listing&cpid=res21051107536098060913429#pdp-page-content
from a plurality of distributors for the products	The Gap Ecommerce System employs a method comprising receiving product data from a plurality of distributors for the products. For instance, product information on product availability, store availability, quantity available, etc.

https://www.**statista**.com/statistics/242596/number-of-stores-of-the-gap-inc-by-store-brand-and-region/

TRY OUR CORPORATE SOLUTION FOR FREE!   📞 (212) 419-8286   ✉ hadley.ward@statista.com

statista ⊿

Prices & Access ▾   Statistics ▾   Reports ▾   Outlooks ▾   Tools ▾   Infographics   Services ▾

Retail & Trade › Fashion & Accessories

Number of stores of The Gap, Inc. worldwide from 2010 t

Search: [   ]   Records: [13   ▼]

	Gap North America	Gap Europe	Gap Asia	Old Navy North America	Old Navy Asia	Banana Republic North America	Banana Republic Asia	Banana Republic Europe
2010	1,111	184	135	1,027	-	576	29	5
2011	1,043	193	152	1,016	-	581	31	10
2012*	990	198	191	1,010	1	590	38	10
2013	968	193	221	1,004	18	596	43	11
2014	960	189	266	1,013	43	610	44	11
2015	866	175	305	1,030	65	612	51	10
2016	884	164	311	1,043	13	601	48	1
2017*	810	155	313	1,066	14	576	45	0
2018	758	152	332	1,139	15	556	45	-
2019	675	137	358	1,207	17	541	48	-
2020	556	117	340	1,220	0	471	47	-

US 8,712,846

	For instance, the screenshots below demonstrate comparable product offers from a plurality of distributors (i.e. Gap stores).

US 8,712,846

https://www.gap.com/browse/product.do?pid=6705040320002&cid=11900&pcid=11900&vid=1&n
av=meganav%3AMen%3AJust+Arrived%3ANew+Arrivals&storeId=657&cpos=2&cexp=1567&kc

8

US 8,712,846

	id=CategoryIDs%3D11900&cvar=11747&ctype=Listing&cpid=res2105110753609806091 3429#pdp-page-content
via a communications network;	The product data is received by the Gap Ecommerce System from the plurality of distributors via a communications network. For instance, product availability by store.

9
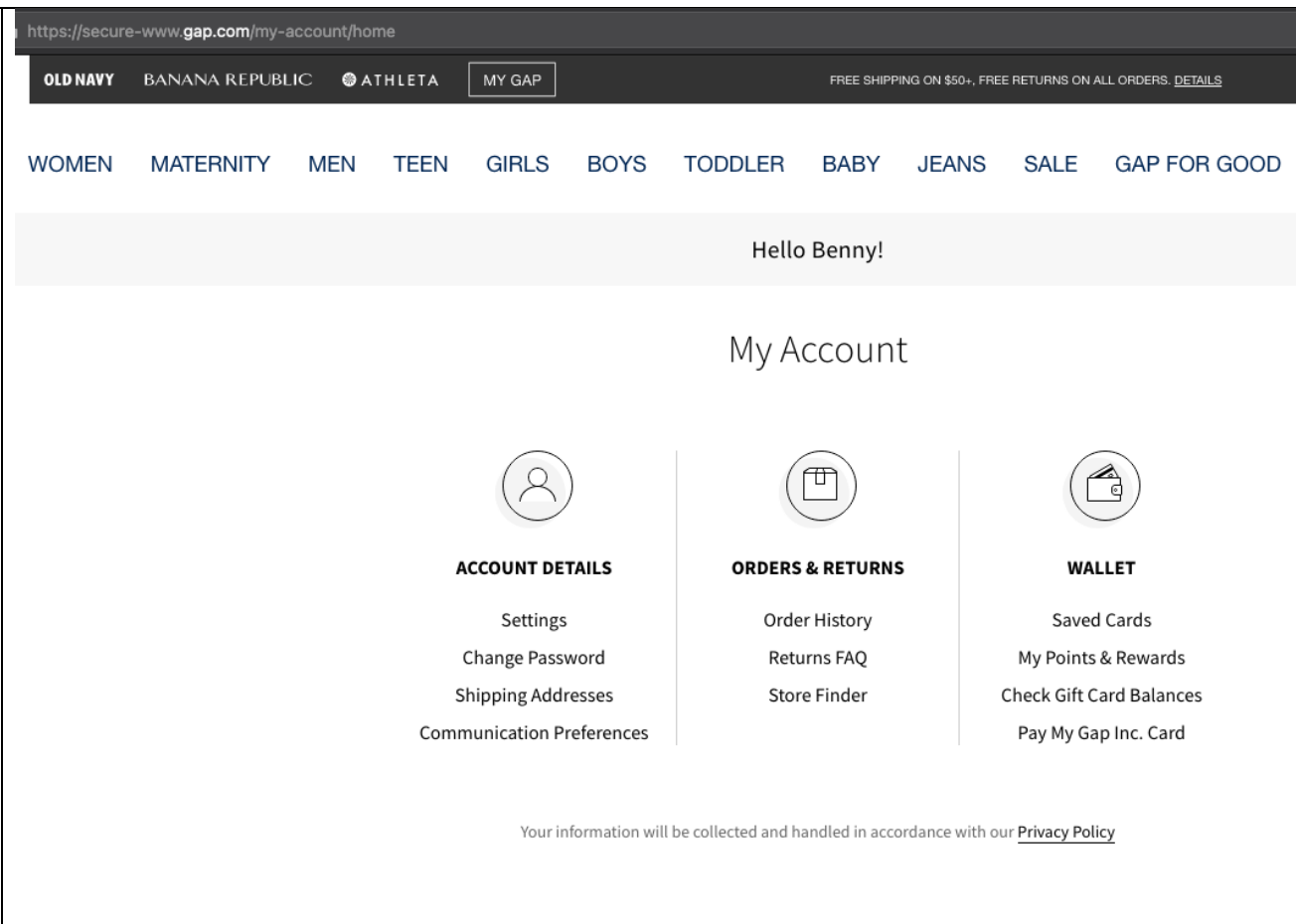
US 8,712,846

US 8,712,846

Receiving customer data	The Gap Ecommerce System receives customer data from a plurality of customers. Depicted below is the Gap.com portal for members, and the customer data that is received and stored is both copious and diverse. Customer data that is received can include names, addresses, account information, communication preferences, order history, browsing history, advertising preferences, email addresses, location information, rewards information, payment method information, etc. The screenshot below depicts the profile page of the Gap customer account portal.

11

US 8,712,846

from a plurality of customers,	Gap has a plurality of customers.

US 8,712,846

https://www.statista.com/statistics/242596/number-of-stores-of-the-gap-inc-by-store-brand-and-region/

TRY OUR CORPORATE SOLUTION FOR FREE! ☎ (212) 419-8286 ✉ hadley.ward@statista.com

statista

Prices & Access ▾ | Statistics ▾ | Reports ▾ | Outlooks ▾ | Tools ▾ | Infographics | Services ▾

Retail & Trade › Fashion & Accessories

Number of stores of The Gap, Inc. worldwide from 2010 t

Search: [   ]   Records: [13 ▾]

	Gap North America	Gap Europe	Gap Asia	Old Navy North America	Old Navy Asia	Banana Republic North America	Banana Republic Asia	Banana Republic Europe
2010	1,111	184	135	1,027	-	576	29	5
2011	1,043	193	152	1,016	-	581	31	10
2012*	990	198	191	1,010	1	590	38	10
2013	968	193	221	1,004	18	596	43	11
2014	960	189	266	1,013	43	610	44	11
2015	866	175	305	1,030	65	612	51	10
2016	884	164	311	1,043	13	601	48	1
2017*	810	155	313	1,066	14	576	45	0
2018	758	152	332	1,139	15	556	45	-
2019	675	137	358	1,207	17	541	48	-
2020	556	117	340	1,220	0	471	47	-

13

US 8,712,846

the customer data comprising location information associated with customers, the location information derived from an IP address associated with one or more of the customers;	The customer data comprises, in part, location information associated with customers, the location information derived from an IP address associated with one or more of the customers. Depicted is the opening screen of the Gap website from the same device and by the same customer as shown above, except that it is being accessed using the browser's "incognito" mode. The website is therefore not deriving any saved information from the accessing computers cache, but it still knows the location of the customer who is accessing the website. This information can only be derived from the accessing computer's IP address under these circumstances. Under non-"Incognito" conditions, the saved address of the customer would override the location data derived from the IP address for the display and preferences, but Gap is nonetheless receiving location information associated with customers that is derived from the customers' IP addresses. The website also infers that the customer using said IP address is most likely an English speaker.

14

US 8,712,846

15

US 8,712,846

| Generating at least in part from the customer data, user specific product offerings from the plurality of products; and Sending, by a computer, automated messages comprising the at least one user-specific product offering to the one or more customers. | The Gap Ecommerce System generates user specific product offerings as lest in part from the customer data and sends automated messages of said user specific product offerings to customers by a computer. Depicted below are one or more messages containing user-specific product offerings generated at least in part from the customer location data that appear embedded in the home page of the Gap.com website for a customer who is logged into their online account. Note: the offerings change over time as personal information, such as search history, browsing history, and purchase history, is updated. |

16

US 8,712,846

17

US 8,712,846

US 8,712,846

3. The method of claim 1, wherein the product data comprises at least one of: product description, quantity available, and price or reach of the products for each of the distributors.	See "Product Data" above.
4. The method of claim 1, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address, and purchase patterns.	See "Customer Data" above.

EXHIBIT 4

US 8,396,743

Analysis of Infringement of U.S. Patent No. 8,396,743 by The Gap, Inc.
(Based on Public Information Only)

Consolidated Transaction Processing LLC ("CTP") provides this preliminary and exemplary infringement analysis with respect infringement of U.S. Patent No. 8,396,743, entitled "Sending Targeted Product Offerings Based on Personal Information" (the "'743 patent") by The Gap, Inc., ("Gap"). The following chart illustrates an exemplary analysis regarding infringement by Gap commercial web site accessible through the base URL, along with any hardware and/or software for provisioning that web site (collectively, the "Infringing Instrumentalities").
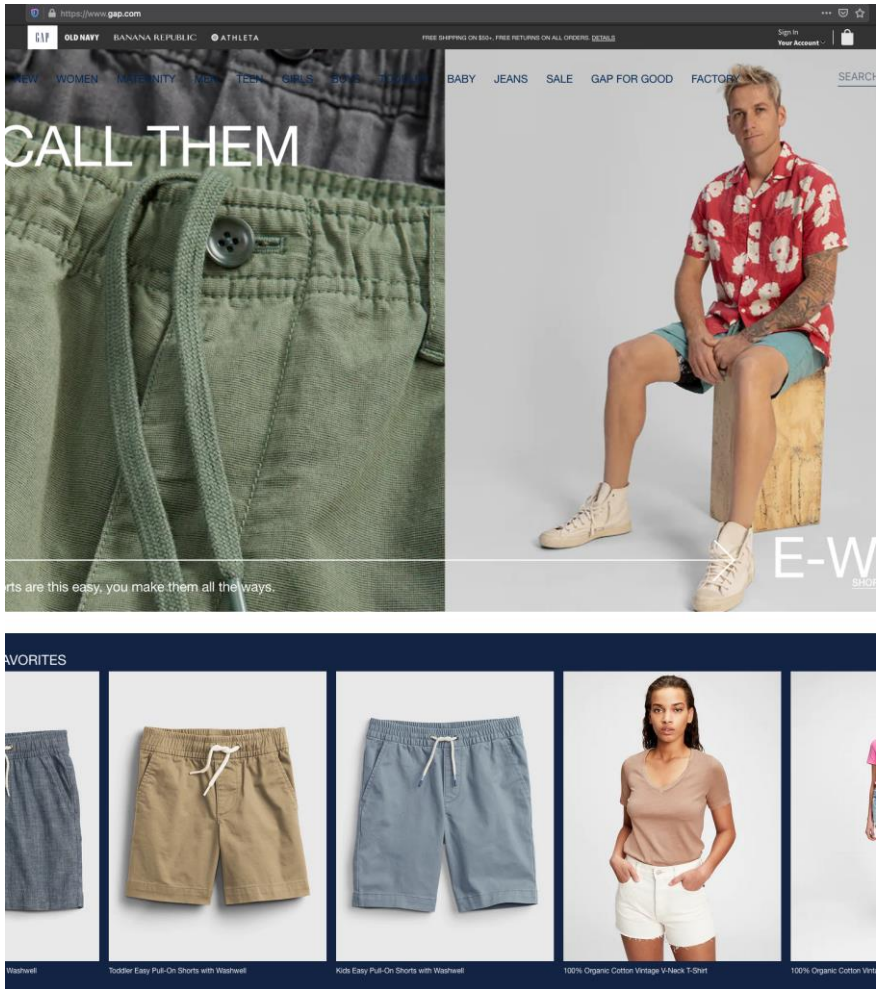
The analysis set forth below is based only upon information from publicly available resources regarding the Infringing Instrumentalities, as Gap has not yet provided any non-public information.

Unless otherwise noted, CTP contends that Gap directly infringes the '743 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Infringing Instrumentalities. The following exemplary analysis demonstrates that infringement.

Unless otherwise noted, CTP believes and contends that each element of each claim asserted herein is literally met through Gap's provision of the Infringing Instrumentalities. However, to the extent that Gap attempts to allege that any asserted claim element is not literally met, CTP believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Infringing Instrumentalities, CTP did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Infringing Instrumentalities, as set forth herein. In each instance, the identified feature of the Infringing Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

CTP notes that the present claim chart and analysis are necessarily preliminary in that CTP has not obtained substantial discovery from Gap nor has Gap disclosed any detailed analysis for its non-infringement position, if any. Further, CTP does not have the benefit of claim construction or expert discovery. CTP reserves the right to supplement and/or amend the positions taken in this preliminary and exemplary infringement analysis, including with respect to literal infringement and infringement under the doctrine of equivalents, if and when warranted by further information obtained by CTP, including but not limited to information adduced through information exchanges between the parties, fact discovery, claim construction, expert discovery, and/or further analysis.

1

US 8,396,743

Claims	[INFRINGING INSTRUMENTALITIES]
1. A computer-implemented method for targeted product offering, the method comprising:	The Gap Ecommerce System employs a computer-implemented method for targeted product offering.

2

US 8,396,743

Receiving product data for a plurality of products	The Gap Ecommerce System receives product data from a plurality of products.

3
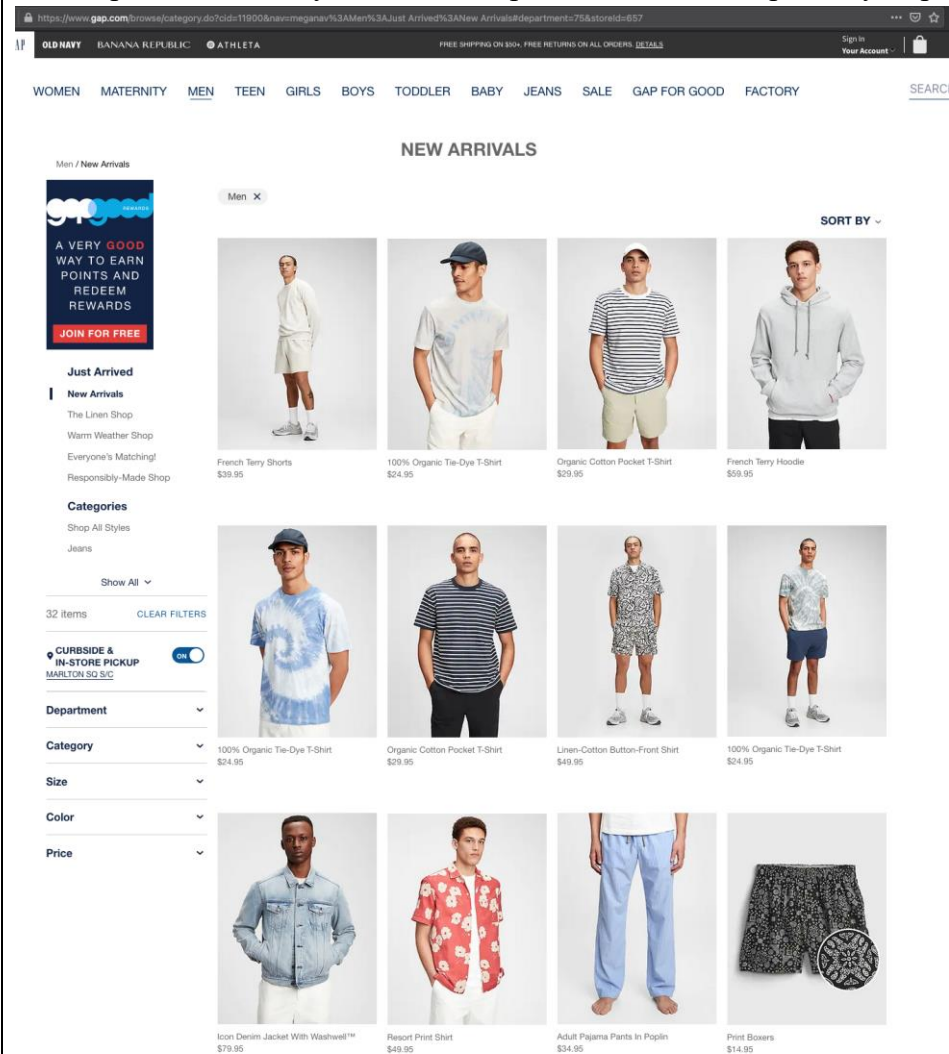
US 8,396,743

This data can include some or all of the following: product description, price(s), size(s), color(s), specifications, flavor, shipping information, customer reviews, ratings, photos, model numbers, links, store availability, related products, label information, materials, etc.

4

US 8,396,743

	https://www.gap.com/browse/product.do?pid=6705040320002&cid=11900&pcid=11900&vid=1&nav=meganav%3AMen%3AJust+Arrived%3ANew+Arrivals&storeId=657&cpos=2&cexp=1567&kcid=CategoryIDs%3D11900&cvar=11747&ctype=Listing&cpid=res2105110753609806091343 29#pdp-page-content
from a plurality of distributors for the products	The Gap Ecommerce System employs a method comprising receiving product data from a plurality of distributors for the products. For instance, product information on product availability, store availability, quantity available, etc.

5

US 8,396,743
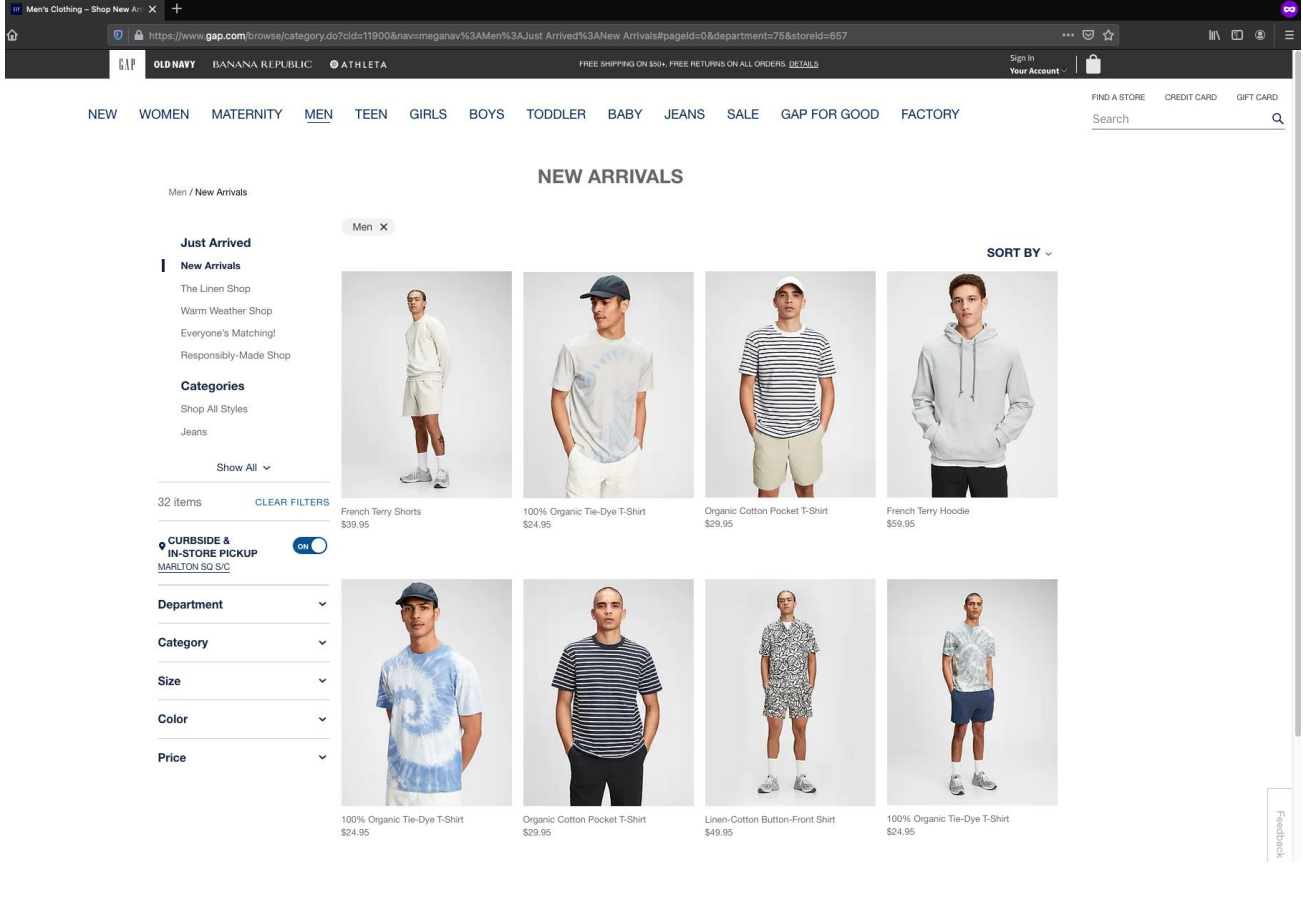

	Gap North America	Gap Europe	Gap Asia	Old Navy North America	Old Navy Asia	Banana Republic North America	Banana Republic Asia	Banana Republic Europe
2010	1,111	184	135	1,027	-	576	29	5
2011	1,043	193	152	1,016	-	581	31	10
2012*	990	198	191	1,010	1	590	38	10
2013	968	193	221	1,004	18	596	43	11
2014	960	189	266	1,013	43	610	44	11
2015	866	175	305	1,030	65	612	51	10
2016	884	164	311	1,043	13	601	48	1
2017*	810	155	313	1,066	14	576	45	0
2018	758	152	332	1,139	15	556	45	-
2019	675	137	358	1,207	17	541	48	-
2020	556	117	340	1,220	0	471	47	-

6

US 8,396,743

	For instance, the screenshots below demonstrate comparable product offers from a plurality of distributors (i.e. Gap stores).

US 8,396,743

https://www.gap.com/browse/product.do?pid=6705040320002&cid=11900&pcid=11900&vid=1&n
av=meganav%3AMen%3AJust+Arrived%3ANew+Arrivals&storeId=657&cpos=2&cexp=1567&kc
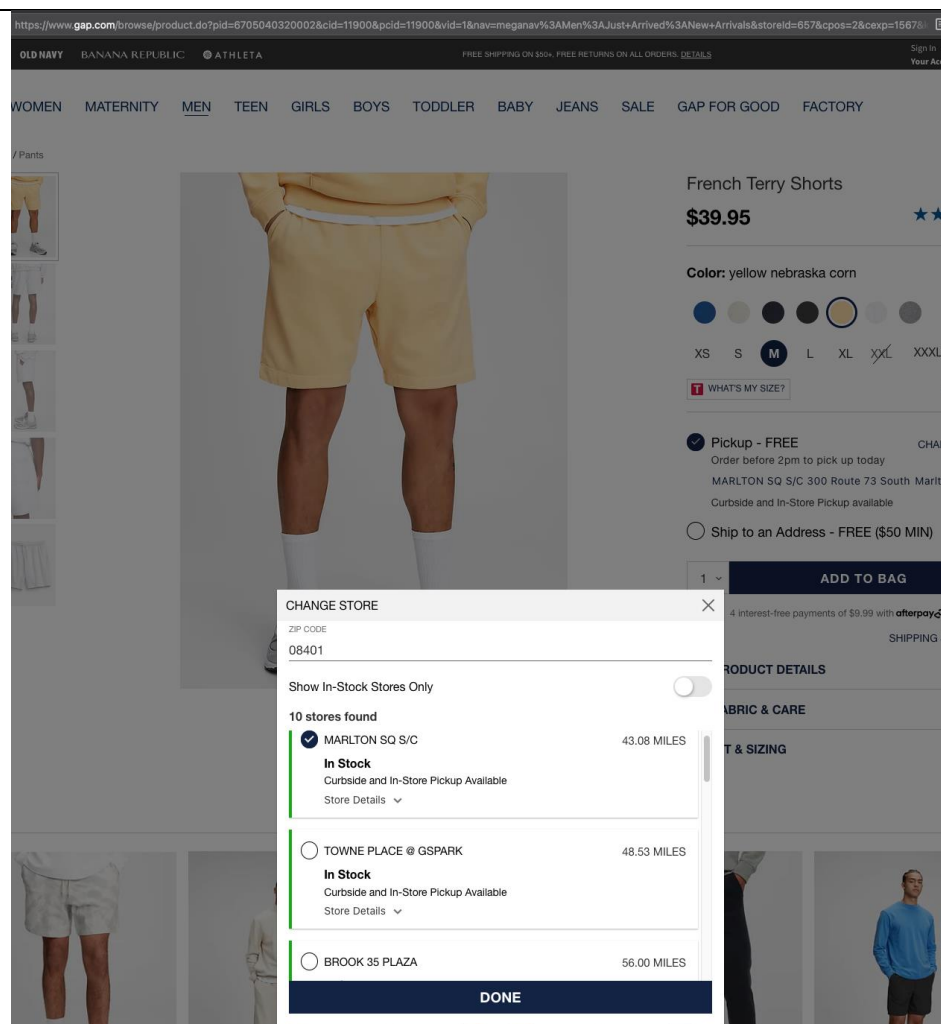
US 8,396,743

	id=CategoryIDs%3D11900&cvar=11747&ctype=Listing&cpid=res2105110753 6098060913429#pdp-page-content
via a communications network;	The product data is received by the Gap Ecommerce System from the plurality of distributors via a communications network. For instance, product availability by store.

9

US 8,396,743

10
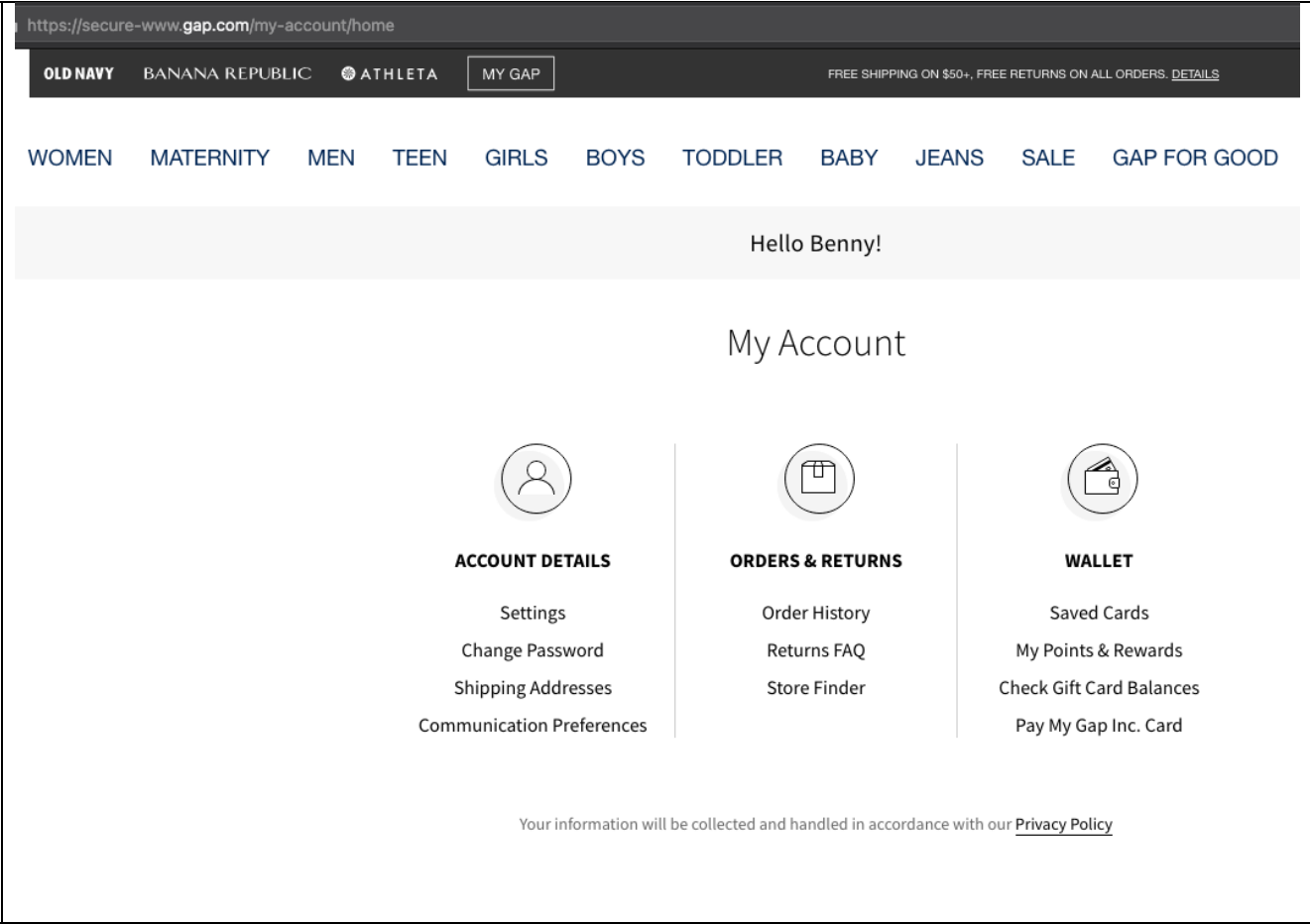
US 8,396,743

Receiving customer data	The Gap Ecommerce System receives customer data from a plurality of customers. Depicted below is the Gap.com portal for members, and the customer data that is received and stored is both copious and diverse. Customer data that is received can include names, addresses, account information, communication preferences, order history, browsing history, advertising preferences, email addresses, location information, rewards information, payment method information, etc.
	The screenshot below depicts the profile page of the Gap customer account portal.

US 8,396,743

	https://secure-www.**gap.com**/my-account/home **OLD NAVY** BANANA REPUBLIC ⊛ATHLETA MY GAP FREE SHIPPING ON $50+, FREE RETURNS ON ALL ORDERS. DETAILS WOMEN MATERNITY MEN TEEN GIRLS BOYS TODDLER BABY JEANS SALE GAP FOR GOOD Hello Benny! My Account **ACCOUNT DETAILS** **ORDERS & RETURNS** **WALLET** Settings Order History Saved Cards Change Password Returns FAQ My Points & Rewards Shipping Addresses Store Finder Check Gift Card Balances Communication Preferences Pay My Gap Inc. Card Your information will be collected and handled in accordance with our Privacy Policy
From a plurality of customers	Gap has a plurality of customers.

12

US 8,396,743

https://www.statista.com/statistics/242596/number-of-stores-of-the-gap-inc-by-store-brand-and-region/

TRY OUR CORPORATE SOLUTION FOR FREE!   ☎ (212) 419-8286   ✉ hadley.ward@statista.com

statista ⚎

Prices & Access ▾   Statistics ▾   Reports ▾   Outlooks ▾   Tools ▾   Infographics   Services ▾

Retail & Trade › Fashion & Accessories

Number of stores of The Gap, Inc. worldwide from 2010 to

Search: [   ]   Records: 13 ▾

	Gap North America	Gap Europe	Gap Asia	Old Navy North America	Old Navy Asia	Banana Republic North America	Banana Republic Asia	Banana Republic Europe
2010	1,111	184	135	1,027	-	576	29	5
2011	1,043	193	152	1,016	-	581	31	10
2012*	990	198	191	1,010	1	590	38	10
2013	968	193	221	1,004	18	596	43	11
2014	960	189	266	1,013	43	610	44	11
2015	866	175	305	1,030	65	612	51	10
2016	884	164	311	1,043	13	601	48	1
2017*	810	155	313	1,066	14	576	45	0
2018	758	152	332	1,139	15	556	45	-
2019	675	137	358	1,207	17	541	48	-
2020	556	117	340	1,220	0	471	47	-

13

US 8,396,743

the customer data comprising location information associated with customers, the customer location information derived from an IP address associated with the customer;	The customer data comprises, in part, location information associated with customers, the location information derived from an IP address associated with one or more of the customers. Depicted is the opening screen of the Gap website from the same device and by the same customer as shown above, except that it is being accessed using the browser's "incognito" mode. The website is therefore not deriving any saved information from the accessing computers cache, but it still knows the location of the customer who is accessing the website. This information can only be derived from the accessing computer's IP address under these circumstances. Under non-"Incognito" conditions, the saved address of the customer would override the location data derived from the IP address for the display and preferences, but Gap is nonetheless receiving location information associated with customers that is derived from the customers' IP addresses. The website also infers that the customer using said IP address is most likely an English speaker.

14

US 8,396,743

Generating at least in part from the personal information concerning a customer location, at least one user-specific product	The Gap Ecommerce System generates user specific product offerings as lest in part from the customer data and sends automated messages of said user specific product offerings to customers by a computer.

US 8,396,743

offering from the plurality of products; and Sending, by a computer, automated messages comprising the at least one user-specific product offering to the one or more customers.	Depicted below are one or more messages containing user-specific product offerings generated at least in part from the customer location data that appear embedded in the home page of the Gap.com website for a customer who is logged into their online account. Note: the offerings change over time as personal information, such as search history, browsing history, and purchase history, is updated.

16

US 8,396,743

17

US 8,396,743

18

US 8,396,743

4. The method of claim 1, wherein the customer data comprises at least one of: IP (Internet Protocol) address, IP host name, customer name, billing address, email address, and purchase patterns.	See "Customer Data" above.

19

JS 44 (Rev. 09/19)

CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. *(SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)*

I. (a) PLAINTIFFS

Consolidated Transaction Processing LLC

DEFENDANTS

Big Lots Stores, Inc.

(b) County of Residence of First Listed Plaintiff _____
(EXCEPT IN U.S. PLAINTIFF CASES)

County of Residence of First Listed Defendant _____
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED.

(c) Attorneys *(Firm Name, Address, and Telephone Number)*

Peter J. Corcoran, III, Esq., M.S., LL.M.; CORCORAN IP LAW PLLC; 4142 McKnight Road, Texarkana, Texas 75503; (903) 701-2481

Attorneys *(If Known)*

II. BASIS OF JURISDICTION *(Place an "X" in One Box Only)*

- ☐ 1 U.S. Government Plaintiff
- ☒ 3 Federal Question *(U.S. Government Not a Party)*
- ☐ 2 U.S. Government Defendant
- ☐ 4 Diversity *(Indicate Citizenship of Parties in Item III)*

III. CITIZENSHIP OF PRINCIPAL PARTIES *(Place an "X" in One Box for Plaintiff and One Box for Defendant)*
(For Diversity Cases Only)

	PTF	DEF		PTF	DEF
Citizen of This State	☐ 1	☐ 1	Incorporated *or* Principal Place of Business In This State	☐ 4	☐ 4
Citizen of Another State	☐ 2	☐ 2	Incorporated *and* Principal Place of Business In Another State	☐ 5	☐ 5
Citizen or Subject of a Foreign Country	☐ 3	☐ 3	Foreign Nation	☐ 6	☐ 6

IV. NATURE OF SUIT *(Place an "X" in One Box Only)*

Click here for: Nature of Suit Code Descriptions.

CONTRACT	TORTS		FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES
☐ 110 Insurance	**PERSONAL INJURY**	**PERSONAL INJURY**	☐ 625 Drug Related Seizure of Property 21 USC 881	☐ 422 Appeal 28 USC 158	☐ 375 False Claims Act
☐ 120 Marine	☐ 310 Airplane	☐ 365 Personal Injury - Product Liability	☐ 690 Other	☐ 423 Withdrawal 28 USC 157	☐ 376 Qui Tam (31 USC 3729(a))
☐ 130 Miller Act	☐ 315 Airplane Product Liability	☐ 367 Health Care/			☐ 400 State Reapportionment
☐ 140 Negotiable Instrument	☐ 320 Assault, Libel & Slander	Pharmaceutical Personal Injury		**PROPERTY RIGHTS**	☐ 410 Antitrust
☐ 150 Recovery of Overpayment & Enforcement of Judgment	☐ 330 Federal Employers'	Product Liability		☐ 820 Copyrights	☐ 430 Banks and Banking
☐ 151 Medicare Act	Liability	☐ 368 Asbestos Personal Injury Product		☒ 830 Patent	☐ 450 Commerce
☐ 152 Recovery of Defaulted Student Loans (Excludes Veterans)	☐ 340 Marine	Liability		☐ 835 Patent - Abbreviated New Drug Application	☐ 460 Deportation
	☐ 345 Marine Product Liability	**PERSONAL PROPERTY**	**LABOR**	☐ 840 Trademark	☐ 470 Racketeer Influenced and Corrupt Organizations
☐ 153 Recovery of Overpayment of Veteran's Benefits	☐ 350 Motor Vehicle	☐ 370 Other Fraud	☐ 710 Fair Labor Standards Act	**SOCIAL SECURITY**	☐ 480 Consumer Credit (15 USC 1681 or 1692)
☐ 160 Stockholders' Suits	☐ 355 Motor Vehicle Product Liability	☐ 371 Truth in Lending	☐ 720 Labor/Management Relations	☐ 861 HIA (1395ff)	☐ 485 Telephone Consumer Protection Act
☐ 190 Other Contract	☐ 360 Other Personal Injury	☐ 380 Other Personal Property Damage	☐ 740 Railway Labor Act	☐ 862 Black Lung (923) ☐ 863 DIWC/DIWW (405(g))	☐ 490 Cable/Sat TV
☐ 195 Contract Product Liability	☐ 362 Personal Injury - Medical Malpractice	☐ 385 Property Damage Product Liability	☐ 751 Family and Medical Leave Act	☐ 864 SSID Title XVI ☐ 865 RSI (405(g))	☐ 850 Securities/Commodities/ Exchange
☐ 196 Franchise					☐ 890 Other Statutory Actions
REAL PROPERTY	**CIVIL RIGHTS**	**PRISONER PETITIONS**	☐ 790 Other Labor Litigation	**FEDERAL TAX SUITS**	☐ 891 Agricultural Acts
☐ 210 Land Condemnation	☐ 440 Other Civil Rights	**Habeas Corpus:**	☐ 791 Employee Retirement Income Security Act	☐ 870 Taxes (U.S. Plaintiff or Defendant)	☐ 893 Environmental Matters
☐ 220 Foreclosure	☐ 441 Voting	☐ 463 Alien Detainee		☐ 871 IRS—Third Party 26 USC 7609	☐ 895 Freedom of Information Act
☐ 230 Rent Lease & Ejectment	☐ 442 Employment	☐ 510 Motions to Vacate Sentence			☐ 896 Arbitration
☐ 240 Torts to Land	☐ 443 Housing/ Accommodations	☐ 530 General			☐ 899 Administrative Procedure Act/Review or Appeal of Agency Decision
☐ 245 Tort Product Liability	☐ 445 Amer. w/Disabilities - Employment	☐ 535 Death Penalty	**IMMIGRATION**		☐ 950 Constitutionality of State Statutes
☐ 290 All Other Real Property	☐ 446 Amer. w/Disabilities - Other	**Other:** ☐ 540 Mandamus & Other	☐ 462 Naturalization Application		
	☐ 448 Education	☐ 550 Civil Rights ☐ 555 Prison Condition ☐ 560 Civil Detainee - Conditions of Confinement	☐ 465 Other Immigration Actions		

V. ORIGIN *(Place an "X" in One Box Only)*

- ☒ 1 Original Proceeding
- ☐ 2 Removed from State Court
- ☐ 3 Remanded from Appellate Court
- ☐ 4 Reinstated or Reopened
- ☐ 5 Transferred from Another District *(specify)*
- ☐ 6 Multidistrict Litigation - Transfer
- ☐ 8 Multidistrict Litigation - Direct File

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing *(Do not cite jurisdictional statutes unless diversity)*:
35 U.S.C. § 1 et seq.

Brief description of cause:
Patent Infringement

VII. REQUESTED IN COMPLAINT:

☐ CHECK IF THIS IS A **CLASS ACTION** UNDER RULE 23, F.R.Cv.P.

DEMAND $ _____

CHECK YES only if demanded in complaint:
JURY DEMAND: ☒ Yes ☐ No

VIII. RELATED CASE(S) IF ANY

(See instructions):

JUDGE _____ DOCKET NUMBER See attachment

DATE
07/17/2021

SIGNATURE OF ATTORNEY OF RECORD
/s/ Peter J. Corcoran III

FOR OFFICE USE ONLY

RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG. JUDGE _____